

ESSEX COUNTY

Cancer Control and Prevention Capacity and Needs Assessment Report Summary

December 2004

Funds and Support Provided By



**New Jersey Department of Health and Senior Services
Center for Cancer Initiatives
The Office of Cancer Control and Prevention**

Notices:

Medicine is an ever-changing science. As new research and data broaden our knowledge, conclusions may change. The authors and reviewers have endeavored to check the sources of information and to utilize sources believed to be the most reliable in an effort to provide information that is as complete as possible at the time of submission and generally in accord with appropriate standards. However, in view of the possibility of human error or changes in medical science, this work cannot be warranted as being complete and accurate in every respect. Readers are encouraged to confirm the information contained herein with other sources. Information concerning some of the sources of data, rationale for its utilization, acknowledgements of specific parties contributing to these efforts, as well as links to cancer-related information may be found at www.umdny.edu/evalcweb/.

This county-level Report Summary summarizes the larger county report, which is a baseline evaluation of this county, performed as part of the Capacity and Needs Assessment initiative of the New Jersey Comprehensive Cancer Control Plan (www.state.nj.us/health/ccp/ccp_plan.htm), under the direction of the New Jersey Department of Health and Senior Services (NJDHSS) Office of Cancer Control and Prevention (OCCP) (www.state.nj.us/health/ccp/), the University of Medicine and Dentistry of New Jersey (UMDNJ) (www.umdny.edu/evalcweb/), and the Evaluation Committee of the Governor's Task Force on Cancer Prevention, Early Detection and Treatment in New Jersey (Task Force Chair: Arnold Baskies, MD; Evaluation Committee Chair: Stanley H. Weiss, MD).

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Suggested citation for this Report Summary:

Tasslimi A, Hossain A, Rosenblum DM, Collini SL, Bullock W, Kim JY, Weiss SH. Essex County Cancer Capacity and Needs Assessment Report Summary, December 2004. In: *New Jersey Statewide County-based Cancer Capacity and Needs Assessment Initiative, 2003–2004*, Editors: Stanley H. Weiss (UMDNJ) and Margaret L. Knight (NJDHSS).

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Essex County Cancer Capacity and Needs Assessment Report Summary

Introduction

The Office of Cancer Control and Prevention (OCCP) of the New Jersey Department of Health and Senior Services (NJDHSS), in conjunction with the mandate from the Governor's Task Force on Cancer Prevention, Early Detection and Treatment in New Jersey (Task Force), is developing comprehensive capacity and needs assessment reports concerning cancer, individualized for each county in the state. This Report Summary highlights key findings in the Essex County report.¹

The Task Force released New Jersey's Comprehensive Cancer Control Plan (NJ-CCCP) in 2002.² Each county was commissioned to develop a comprehensive capacity and needs assessment report, as part of the initial implementation steps for the NJ-CCCP. The Report and this Report Summary were developed under the direction of the University of Medicine and Dentistry of New Jersey (UMDNJ) and the Evaluation Committee of the Task Force, in furtherance of the NJ-CCCP (which can be found at: http://www.state.nj.us/health/ccp/ccp_plan.htm). This particular assessment was funded by the OCCP and conducted under the contract and direction of two New Jersey Cancer Education and Early Detection (NJCEED) programs in Essex County: (1) "SAVE Women and Men" Project, UMDNJ–University Hospital in Newark and (2) "In the Pink", Saint Michael's Medical Center (SMMC) also in Newark.

The purpose of the capacity and needs assessment reports is to identify the major cancer issues affecting each county and the county's available resources, or lack thereof, for cancer prevention, screening, and treatment, and to propose recommendations for improvement. The Essex County Report¹ analyzes the population demographics and the cancer incidence and mortality rates and distribution of stage at diagnosis for the seven priority cancers of the NJ-CCCP (breast, cervical, colorectal, lung, oral, melanoma, and prostate), as well as current resources available, in the county. These data guided the development of evidence-based recommendations and interventions to address cancer control priorities at local and state levels.

Section 1 – County Demographic Profile

Essex County's population is comprised of groups that vary widely in socioeconomic status, race/ethnicity, culture, and language. To reduce the cancer burden, the county's large and diverse population must be considered when designing and implementing programs and services.

Population

In 2000, the county had a population density of 6,285 people per square mile; it is the 2nd most densely populated county in New Jersey, and New Jersey is the most densely populated state in the United States (p. 8¹).^a The county's 22 municipalities are defined as "urbanized" by the U.S. Census; however, this definition encompasses both inner-city urban and non-inner-city urban (or suburban). The four inner-city urban municipalities are Newark, Orange, Irvington, and East Orange, while the remaining 18 municipalities are non-inner-city urban (Table 1.1).¹ The greatest population concentration can be found in 8 of the county's 22 municipalities, namely: Newark (273,546), which alone accounts for one-third of the county's population; East Orange (69,824); Irvington (60,695); Bloomfield (47,683); West Orange (44,943); Montclair (38,977); Belleville (35,928); and Orange (32,868) (p. 10).¹

Demographic Profile of County Compared to State

In 2000, Essex County's population had a younger median age (34.7 years) than the median age for the state (36.7 years); however, in both county and state, the oldest population group (85 and over), was growing at the fastest rate, by 46%^b in the state and 30% in the county (Table 1.3).¹

In contrast to the state, where whites comprised 73% of the population, minorities comprised the majority of the population in Essex County in 2000. Nearly one-third (29%) of the state's black population resided in Essex County; blacks comprised 41% of the county's population which was more than three times greater than the corresponding state figure of 14% (Table 1.7).¹ In Essex County, Hispanics^c comprised 16% of the population compared to 13% in the state (Tables 1.7 and 1.8).¹ In addition, 48% of the state's Creole-speaking Haitian population (n=28,783) and 33% of the state's Portuguese-speaking population (n=72,870) reside in Essex County (p. 20¹).³ In 2000, there were about 21,890 linguistically isolated households^d in Essex County, with 53,731 people, representing 7.5% of the population aged 5 years or older. Statewide, a smaller proportion of households (6.3%) fell in this category (Table 1.10).¹

The county also had higher proportions of poverty, low education, low income, and high unemployment.^e

- The median household income in Essex County increased 30% from 1989 (\$34,518) to 1999 (\$44,944). In comparison, the statewide median household income increased 35% during the same period, from \$40,927 to \$55,146. Essex County's median household income was lower than that of the state in both 1989 and 1999 (Table 1.16).¹

^a Page, table, and figure numbers in parentheses refer to detailed supporting data found in the full report.¹

^b In general, percentages in this report are rounded to two digits.

^c Hispanics and non-Hispanics may be of any race. Racial categories include both Hispanics and non-Hispanics.

^d A linguistically isolated household is one in which no member 14 years old and over (1) speaks only English or (2) speaks a non-English language and speaks English "very well". In other words, all members 14 years old and over have at least some difficulty with English.

^e All figures for poverty, income, and employment are from the 2000 Census, but refer to the year 1999.

- The unemployment rate^f for the county was 9.3% compared to 5.8% for the state (Table 1.18).¹ The proportion of individuals below the poverty level for the county was 16%, nearly twice the percentage for the state (8.5%). Similarly, the proportion of families below the poverty level in the county was more than twice that for the state (13% vs. 6.3%, respectively) (Table 1.20).¹
- Of the county's population 25 years and over, 24% had less than a high school education compared to 18% for the state (Table 1.24).¹

Comparison of Demographic Profile within the County

The county's 2000 demographic profile was distinctive within the state, with the county's population suffering a disproportionate burden of social and economic ills compared to the overall population. Of greater concern is the uneven distribution of burden within the county.

The population of Essex County is not homogeneously distributed. Rather, 80% of the minority population (everyone except white non-Hispanics) lives in the contiguous municipalities of East Orange, Irvington, Orange, and Newark. Of the county's 327,324 black residents (41% of the county), 86% live in these four municipalities, where they make up respectively 90%, 82%, 75% and 54% of the residents^g (Table 1.7a).¹ Of the county's 122,347 persons of Hispanic origin, 76% live in these four municipalities, and if the neighboring municipalities of Belleville, Bloomfield, and West Orange are added, the resulting seven municipalities include 92% of the county's Hispanic population (p. 22).¹ Newark alone, which is 30% Hispanic, includes 66% of the county's Hispanics (Table 1.9).¹ Newark, Belleville, Bloomfield, Orange, West Orange, and Irvington have the highest percentages of linguistically isolated households, accounting for 88% of such households in the county. Countywide, Spanish is spoken in 53% of linguistically isolated households (Table 1.12).¹

Studies on access to care reveal a relationship between language barrier and access to care. Persons living in linguistically isolated households are less likely to access prevention services, visit private doctors, or interact effectively with healthcare providers during health visits.⁴⁻⁶ A variety of personal, cultural, organizational, and social factors further compound these language barriers, creating obstacles to healthcare access at both individual and system levels.⁴⁻⁶ Efforts to improve cancer early detection, access to adequate care, and health outcomes will depend on the ability of cancer-related programs to remove or minimize these barriers to care.

Sixteen of Essex County's 22 municipalities have a higher percentage of persons aged 65 and over than the county overall. East Orange, Irvington, Orange, and Newark (as well as two suburban municipalities, Glen Ridge and North Caldwell) have a lower percentage (Table 1.5).¹ Thus, strategies to address those barriers to screening and early detection associated with poverty should focus primarily on inner-city areas, whereas attention must be paid to both inner-city and non-inner-city areas when addressing risk factors associated with age.

^f Unemployment rate is based on the population 16 years or older in the civilian labor force.³

^g By contrast, the next highest percentages of black residents were in Maplewood, Montclair, and South Orange, where they constitute 31% to 33% of the population; after that came West Orange (17.5% black), with all other municipalities below 15% black (and most below 10%).

Service and treatment needs are different for the four inner-city municipalities, as compared to the other municipalities. While factors such as poverty, low income, low education, and high unemployment are not exclusive to the four inner-city municipalities, they are overwhelmingly concentrated in these municipalities.

- Newark (\$26,913), East Orange (\$32,346), Orange (\$35,759), and Irvington (\$36,575) had median household incomes far below those of the neighboring municipalities, where the median household incomes ranged from \$48,576 (in Belleville) to \$148,173 (in Essex Fells).
- The portion of the population in East Orange (72%), Irvington (72%), Newark (58%), and Orange (72%), with a high school education or better were lower than the county average of 76% and the state average of 82% (Tables 1.24 and 1.26).^{1;3} The comparable percentages for the three neighboring non-inner city urban municipalities of Essex Fells (97%), Glen Ridge (96%), and Millburn (97%) exceed the county average by more than 25% (p. 37).
- The percentage of Newark residents alone with no schooling (3.6%) was twice that for the county (1.8%) (Table 1.26)^{1;3} and three times that for the state (1.2%).³ The percentage of people 25 years and older with only a nursery to 8th grade education was 15%, nearly twice the county figure of 7.5% (Table 1.26).¹ These differences in education across municipalities must be factored into any intervention designed to improve the health and well-being of area residents in terms of cancer screening, education, compliance with treatment regimens, and adoption of positive health behaviors to minimize risks of preventable cancers.
- Unemployment in the county was unevenly distributed; the percentages for Newark (16%), Irvington (13%), Orange (11%), and East Orange (13%) (Table 1.19)¹ surpassed those of their suburban neighbors, where percentages ranged from 6.6% in Belleville to 1.1% in Cedar Grove (p. 31).³ The county's overall percentage was 9.3% (Table 1.18).

High unemployment rates mean that many residents lack healthcare insurance, are underinsured, or have Medicaid. The uninsured are more likely to seek care through hospital outpatient clinics, emergency departments, and/or community health centers.⁶ Consequently, among this population, the lack of adequate access to primary care significantly influences the rate of hospitalization due to emergency room utilization.^{4;5} Care offered through these sites may be fragmented and lack continuity. The uninsured, underinsured, and Medicaid populations can particularly benefit from the Essex County NJCEED programs.

Transportation

In Essex County, 7.3% of residents of owner-occupied housing had no vehicle available compared to 4.9% in the state. The corresponding percentage was 18% for Newark. Forty-one percent of renter-occupied homes in Essex County had no vehicle available; many of these households were concentrated in Newark, where 52% of such homes lacked a vehicle (Table 1.30).^{1;3} County residents seeking cancer services, especially screening, may need to rely on public transportation, with its costs, route, and schedule limitations posing a barrier to access.

Health Status Indicators

In 2000, the life expectancy in Essex County (71 years) was 6.2 years lower than that in the state as a whole (77 years). The age-adjusted death rate (due to all causes) for the county was 949.7 per 100,000, 11% higher than the corresponding rate for the state (852.4). Death rates for blacks in the county exceeded those for whites, most markedly in the 25- to 44-year-old age group, where the rate for blacks (429.5 per 100,000) was more than three and a half times the rate for whites (120.1 per 100,000) (Table 1.34).¹

According to data from the Behavioral Risk Factor Surveillance System (BRFSS), 21.7% of New Jersey male adults (aged 18 years and older), 20.9% of New Jersey female adults, and 12.7% of New Jersey adolescents (aged 12 to 17 years) smoked in 2001.¹ Comparable information is not currently available for Essex County, but based on the statewide percentages, there are an estimated 124,791 male and female adult smokers and 8,253 adolescent smokers in Essex County (p. 46).^{1;3;7} One-half of respiratory disease deaths, over one-quarter of all cancer deaths, and nearly 20% of cardiovascular disease deaths in New Jersey in 1996–1998 were attributable to cigarette smoking (Figure 1.2).¹ Among New Jersey counties, Essex County had the highest number of admissions for all drugs in 2001 (9,168) – 17% of all New Jersey admissions in this category (Essex County comprised 9.4% of the state's population) (p. 50).¹

Those designing and implementing cancer prevention and control programs in Essex County should take into account the demographics and baseline health status indicators presented above. In order to be optimally effective, strategies and interventions to reduce the cancer burden must be tailored to the needs of specific populations – especially those that suffer disproportionately from socioeconomic ills adversely affecting access to healthcare and health outcomes.

Section 2 – Overview of Overarching Issues

Although Essex County currently does not have a comprehensive plan to address the cancer-related health issues for its residents, there are numerous healthcare providers, community-based groups, and other organizations working independently and in some instances collaboratively to address issues pertaining to education, outreach, screening, diagnosis, treatment, and palliation.

Since June 2003, detailed information regarding cancer screening, education, advocacy, treatment, palliation, and other activities has been collected to identify resources currently available in the county. Over 120 facilities/organizations,^h in Essex County alone, participated in the 2003–2004 Cancer Resource Database of New Jersey (CRDNJ)ⁱ survey; among these, 97 cancer-related programs were identified. In addition, three different focus group discussions were held at area hospitals and senior citizen community centers – with patients, providers,

^h Including churches, healthcare providers and institutions, large employers, schools, community-based organizations, hospices, and licensed mammography centers.

ⁱ Detailed information regarding cancer screening, education, advocacy, treatment, palliation, and other activities has been collected to identify resources currently available in Essex County. This information was included in the statewide Cancer Resource Database of New Jersey (CRDNJ).⁸ Over 2,700 organizations statewide participated in the 2003–2004 Cancer Resource Database of New Jersey (CRDNJ) survey.⁸

nurses, and outreach workers – which provided insight into barriers to care in the county and complemented the quantitative data reviewed. Below we first introduce resources documented through the CRDNJ survey, followed by a discussion of gaps in access and resources.

Resources

Cancer prevention and control resources in Essex County include NJCEED agencies, general acute care hospitals, Federally Qualified Health Centers (FQHCs), health departments, faith-based organizations, community-based organizations, and schools, among others. Each of these is discussed in further detail below.

NJCEED agencies

There are two active NJCEED agencies in Newark already implementing a number of cancer education and prevention interventions (such as mobile mammography screenings), as well as establishing screening partnerships with faith-based organizations and community development organizations, notably New Community Corporation. Eligible populations for the NJCEED program are those who are uninsured or underinsured and whose incomes fall at or below 250% of the Federal Poverty Level. Funding for the NJCEED program comes from a combination of federal and state funds.^j (Appendix I of the full report details the NJCEED eligibility requirements and educational/awareness programs).¹

General acute care hospitals

A majority of the 12 general acute care hospitals in Essex County (listed in Table 1 below) collaborate with faith-based organizations and community-based organizations to bring various cancer and health-related programs directly into the community, such as cancer education and/or free or reduced-cost screenings (Table 2.16).¹ Of the 76 healthcare providers that participated in the CRDNJ, 18% responded that they provide chemotherapy, 12% provide radiation, and 16% provide surgery. The facilities providing the majority of the cancer treatment services are the major hospitals, as well as a freestanding cancer center (the Garden State Cancer Center, Belleville). Additional services are provided by physician practices, which were not systematically included in the CRDNJ survey.

^j Current program funding limits screening to about 18% of this eligible population in need of breast and cervical cancer screening. There is no federal funding for colorectal and prostate cancer screening, so the total funding available for screening for these cancers is even less.

Table 1 – Cancer Services Offered in Essex County Hospitals, CRDNJ 2003–2004

| Major Hospitals in Essex County | Mammo- graphy | Radiation | Chemo- therapy | Community Clinic |
|---|--------------------------|------------------|---------------------------|-----------------------------|
| Clara Maass Medical Center, Belleville | x | x | x | x |
| Columbus Hospital, Newark | x | x | x | x |
| East Orange General Hospital | x | | | x |
| Hospital Center At Orange* | x (closed) | | x (closed) | x (closed) |
| Irvington General Hospital | x | x | | |
| Mountainside Hospital, Montclair | x | x | x | x |
| Newark Beth Israel Medical Center | x | x | x | |
| Saint Barnabas Medical Center, Livingston | x | x | x | x |
| Saint James Hospital, Newark | x | | x | x |
| Saint Michael's Medical Center, Newark | x | x | x | |
| UMDNJ – University Hospital, Newark | x | x | x | x |
| Veterans Affairs Hospital, East Orange | | x | x | x |

* Officially closed in 2004

Newark Beth Israel Medical Center and Saint Barnabas Medical Center are among the eight medical centers in the Greater New Jersey area (including the New York and Philadelphia metropolitan regions) that have received special funding to provide cancer-related services to children, adolescents, and young adults and are active participants in the Valerie Fund Children's Center for Cancer and Blood Disorders, a non-profit voluntary organization dedicated to supporting comprehensive healthcare services to children with cancer and blood disorders through regionally based children's centers. Both programs are working to change the mindset about childhood cancer treatment in Essex County, in an effort to obviate the long trip to New York for care. It is expected that the use of local services has the potential to improve compliance and accessibility of care. Both hospital programs offer a full complement of services, including radiation therapy, chemotherapy, laboratory services, intensive care unit, and psychosocial services. However, one service remains to be developed for children under 18 in the county – palliative care and hospice programs, still only available outside Essex County.

One of the two facilities of the Department of Veterans Affairs (VA) New Jersey Health Care System is located in East Orange (the other is in Lyons, Somerset County). The East Orange campus offers comprehensive cancer services to the 47,596 civilian veterans in the county, as well as thousands of other veterans from surrounding counties. At this campus, enrolled veterans can receive a complete annual screening, which includes skin, lymph, oral, prostate, and colorectal cancer screening, through the VA Medical Benefits Package. At the Lyons campus, Women's Health Services provides mammograms and cervical cancer screening to enrolled veterans.

Federally Qualified Health Centers

Newark Community Health Centers (NCHC) has been operating as a Federally Qualified Health Center (FQHC) to provide quality comprehensive medical services in a community setting for

indigent, medically underserved^k, and uninsured populations. NCHC is stationed at four locations in different sections of Newark (Broadway Health Center, James White Manor, and Dayton Street Health Center) and East Orange (East Orange Primary Care).

Health departments

There are 22 health departments in Essex County, 20 of which provide health-related services and 19 of which provide some form of cancer education and screening services (Table 2.11).¹ Most of the health departments offer cancer screening and education in conjunction with annual/biannual health fairs or in collaboration with community organizations. East Orange Health Department – in collaboration with the East Orange Primary Care Center and the East Orange Family Health Center – and the Newark Department of Health through its clinic, both provide regular cancer services largely to medically underserved populations.

Faith-based organizations

The most recent national survey of religious institutions found over 500 in Essex County, the majority of which are of the Baptist, Pentecostal, Catholic, Jewish, Episcopal, other Protestant, Methodist, and Presbyterian denominations (Table 1.28).¹ These religious institutions have the potential to impact health through their various health ministries and can help enhance cancer prevention efforts, especially to such minority populations as blacks and Hispanics.

A small sample of faith-based organizations (n=15) – whose congregants are mainly minorities residing in the inner-city municipalities of Newark, East Orange, and Orange – were contacted for inclusion in the CRDNJ database (Table 2.8).¹ Many collaborate with one or a combination of area healthcare providers to offer their members cancer education and screening services through health fairs and pulpit presentations, along with adult/youth prevention initiatives. At the churches contacted, cancer-related prevention/education programs were most often directed at breast, cervical, colorectal, and prostate cancers; 11 churches offered screening and 10 offered screening with education. Nearly one-third of these churches utilize congregant outreach to inform the surrounding community about cancer issues.

Community-based organizations

One notable resource is the American Cancer Society (ACS), a nationwide, community-based voluntary health organization dedicated to helping everyone who faces cancer through research, patient services, early detection, treatment, and education, which maintains a web site (www.cancer.org) and a national call center¹ (1-800-ACS-2345 ext.1).⁹ Through the ACS,

^k The medically underserved refers to individuals who lack access to primary care either because they are socioeconomically disadvantaged and may or may not live in areas with high poverty rates or because they reside in rural areas. The term also refers to individuals that reside in geographic areas where the Index of Medical Underservice (IMU) is 62 or less. The IMU is a weighted score derived from four variables: the ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of population below the federal poverty level, and the percentage of the population aged 65 years and older.

¹ The national call center takes 1.2 million calls per year – See www.cancer.org/docroot/ESN/content/ESN_3_1X_ACS_National_Cancer_Information_Center.asp?sitearea=ESN (accessed 9/22/2004).

patients and others can obtain referrals to local cancer resources as well as to a local “patient and family services director/coordinator” who may be able to serve as a “patient navigator.”

Telephone conferences held during March 2004 with two ACS representatives, one the ACS Regional Patient and Family Services Director for the New Jersey Metro Region and the other a program director for the Essex County ACS, revealed that the ACS provides a multitude of programs addressing such issues as screening referrals to NJCEED, support groups for cancer patients/survivors and their families, peer counseling, and cancer education.

The following community-based organizations are also major players in cancer control and prevention (pp. 66–73).¹

- International Black Women’s Congress (IBWC) provides cancer information and health education (individual, print, and multi-media) to adult minority populations and has just received a Susan G. Komen Foundation grant to implement the ECHO (Educating Communities to Healthy Healing Options) program, aiming to educate female (and male) students in area high schools, who will subsequently carry life-saving messages of early detection back to their communities.
- New Community Corporation (NCC), located in the Central Ward of Newark, is a community-based development organization created to address disparities in housing, healthcare, childcare, homelessness, illiteracy, and other social issues. In the past two years, the organization has joined with UMDNJ’s SAVE program to provide regularly scheduled mammograms and other cancer and health screening to uninsured and underinsured patients by bringing services directly into the community at the NCC Pathmark Shopping Center.
- The 100 Black Men of New Jersey, Inc., is a leader on the issue of prostate cancer among *all* minority males. The organization’s overarching goal is to ensure that treatment modalities recognize the nuances of minority populations, and in the process they work toward increasing access to state-of-the-art medical care for minorities. Through the IMPACT (Improving Minority and Medically Underserved Participation and Access in Clinical Trials) program, the organization has already begun to implement a three-year community-based model throughout New Jersey with the goal of improving enrollment in cancer clinical trials for under-represented populations.^{1;8}
- Similarly, St. Matthew’s Neighborhood Improvement Development Association (NIDA), a program of St. Matthew’s Episcopal Church, collaborates with UMDNJ’s SAVE program and the East Orange Health Department to involve minority residents in cancer screening, particularly breast and prostate screening.

A number of other community-based social service organizations in Essex County contribute either directly or indirectly to cancer prevention efforts in the county.

Schools

Seventeen of the 21 school districts in Essex County that have high schools reported compliance with the state law mandating that school health curricula include instruction on self-examination for breast and testicular cancer. In the majority of districts, education on the health effects of smoking, alcohol, and drugs begins at the early elementary and/or middle school grade levels and

is continually reinforced through high school. Nine districts reported providing smoking cessation services to students in need of them. However, although topics on the deleterious health effects of various behaviors and environmental exposures are taught (Tables 2.14a–c),¹ some educators in the field indicated that it is not clear whether their role as risk factors and/or causes of various cancers (especially sun exposure for skin cancer and human papillomavirus for cervical cancer) is being effectively communicated through the existing curricula (p. 99).¹ Further, only one district reported having a Health and Wellness Committee. While the majority have ad hoc committees comprised of nurses, physical education teachers, principals, and board members, informants contacted through the CRDNJ process with experience on these committees noted that they lack the formal structure to adequately address emerging health issues in their communities. Reasons cited for this lack included: (1) the committees are often not planned carefully in advance, (2) a committee's sphere of influence may be limited to the particular school or health issue from which its members are drawn, and/or (3) flux in membership may hinder attempts to sustain overarching goals and efforts of the committees (p. 95).¹

Gaps in Access and Resources

As just discussed, a wealth of cancer prevention and treatment services is being provided through the county's 12 hospitals, in addition to a strong foundation of cancer outreach, education, and prevention programs being provided through healthcare providers, community-based organizations, and churches among others. However, overwhelming gaps in cancer resources remain, as identified through the CRDNJ assessment process as well as through focus group discussions.

- The NJCEED program is funded to provide breast and cervical cancer screening services to only 18% of its eligible population, thus not reaching 82% of this population. In Newark, the UH-SAVE program had to suspend its screening services from November 22, 2003, to January 23, 2004, due to limited funding. The program resumed at full capacity in July 2004.
- It is estimated that 17% of the county's population is uninsured and 13% are on Medicaid (Table 2.12a).¹
- A lack of cancer treatment funds is forcing hospitals to absorb a major proportion of charity care costs. In calendar year 2002, Essex County hospitals provided \$204,195,539 in charity at Medicaid rates, resulting in a funding gap of \$71,914,203 in just two years alone (due to lag in reimbursement), which is absorbed by hospitals and doctors. In Essex County, the Hospital Center at Orange closed as an acute care facility in 2004 after providing care to area residents for 121 years. The hospital experienced a \$17 million cutback in reimbursement in the summer of 2003. This leaves a significant gap in health service delivery to an already underserved community that depended on the hospital for their care, and although residents can seek care in the 10 hospitals in the surrounding area, a substantial proportion of the patients in Orange are older and face a myriad of access problems including lack of transportation. It is not clear whether the remaining hospitals will have sufficient space to handle the outflow of patients from Orange (p. 90).¹⁰
- According to focus group discussions and interviews with contacts at various facilities for the CRDNJ database, residents cite the following barriers to cancer care and overall healthcare,

among others: (1) lack of adequate health insurance coverage, (2) inability to purchase required medications, (3) language barriers, and (4) fragmented care. With regard to the barrier of fragmented care, many residents enter into care through emergency rooms, outpatient clinics, and/or FQHCs. Lacking specialists to address more sophisticated health needs, these facilities must often refer patients to other facilities that neither provide feedback nor readily share patient records, thus contributing to fragmented care.

- There is a lack of publicly funded activity in the western part of the county, which encompasses the non-inner-city urban municipalities which tend to have higher socioeconomic status. However, for pockets of medically underserved residents in these municipalities, health problems and burdens may be overshadowed by the general affluence of these areas coupled with the staggering problems in the four inner-city municipalities. Such residents may therefore be overlooked for special cancer initiatives.

Section 3 – Cancer Burden

All incidence¹¹ and mortality¹² rates cited herein are per 100,000 and age-adjusted to the 2000 U.S. population standard³. All county and state rates are average annual rates during 1996–2000. For simplicity, the 1996–2000 average annual age-adjusted incidence or mortality rate hereinafter will be abbreviated and referred to as incidence or mortality rate, respectively. The reason the five-year average has been routinely used is that the small number of cases in a single year leads to statistical variations that are not generally meaningful. For U.S. incidence rates, 1999 or 2000 rates were used. Unless otherwise specified, all rates are for invasive cancer only.

Overall Burden of Cancer in Essex County

Incidence and mortality. During the five-year period from 1996 through 2000, Essex County had the 2nd highest age-adjusted incidence rate for all cancer sites combined for men in New Jersey; however, this rate (658.6 per 100,000) was only 5% higher than the corresponding state rate (628.7 per 100,000). For women, the Essex County age-adjusted incidence rate for all cancer sites combined ranked 14th highest out of New Jersey's 21 counties and was similar to the corresponding state rate (451.8 versus 453.7 per 100,000 for the county and state, respectively). Essex County's age-adjusted mortality rates for all cancer sites combined were slightly higher than those of the state for men (278.4 versus 261.1 per 100,000 for the county and state, respectively) and for women (188.1 versus 181.6 for the county and state, respectively). Essex County had the 4th highest mortality rate for all cancer sites combined for men and 7th highest for women.¹ The overall average age-adjusted cancer death rates exhibited a decreasing trend in men and women combined during the same period in both Essex County and New Jersey.

For men in Essex County, lung cancer was the cancer with the highest mortality rate, followed by prostate cancer and colorectal cancer. For women in Essex County, lung cancer was the cancer with the highest mortality rate, followed by breast cancer and colorectal cancer. The most prevalent cancers in Essex County during the period 1996–2000 included: female breast cancer, prostate cancer, colorectal cancer among both men and women, and cervical cancer (cf. Table 2 below and the footnotes and references defining *prevalence estimate*). While lung cancer has

high incidence rates for both men and women, the high mortality rates reduce the prevalence estimate through shorter survivorship.

Incidence and mortality rates and the distribution of stage at diagnosis for the seven NJ-CCCP priority cancers in Essex County are detailed in the next subsection, *Cancer Burden by Site*.

Table 2 – Summary of Selected^a Age-Adjusted^b Essex County Cancer Statistics, 1996–2000^c

| | Estimated Prevalence ^d | Incidence per 100,000 ^e | Mortality per 100,000 ^e |
|--|-----------------------------------|------------------------------------|------------------------------------|
| All Cancers,^f Essex County | | | |
| Male | 11,286 | 658.6 | 278.4 |
| Female | 17,283 | 451.8 | 188.1 |
| NJ-CCCP Priority Cancer by Gender | | | |
| Breast, female | 6,721 | 138.5 | 34.6 |
| Cervical, female | 1,120 | 15.7 | 5.0 |
| Colorectal, male | 1,209 | 74.7 | 30.6 |
| Colorectal, female | 1,895 | 54.5 | 20.6 |
| Lung, male | 421 | 96.8 | 76.9 |
| Lung, female | 490 | 51.1 | 38.9 |
| Melanoma, male | 455 | 14.1 | 2.7 |
| Melanoma, female | 598 | 8.5 | 1.0 |
| Oral/Oropharyngeal, male | 379 | 17.6 | 5.6 |
| Oral/Oropharyngeal, female | 257 | 6.9 | 2.6 |
| Prostate, male | 5,089 | 227.4 | 39.6 |

^a Based upon the NJ-CCCP.

^b Age-adjusted to 2000 U.S. Census population standards. Age-adjustment is used to describe rates in which statistical procedures have been applied to remove the effect of differences in composition (specifically, variations in age distribution) of the various populations. This is important in order to portray an accurate picture of the burden of cancer, since cancer is known to disproportionately affect persons of differing ages.

^c Rates are average annual rates during the time period 1996 through 2000.

^d Prevalence is the measurement of burden of disease in the population at a particular point in time. Within this report, it represents the number of people alive who have ever been diagnosed with the disease. Prevalence figures given here are rough theoretical estimates, based on a number of assumptions, and computed by applying national prevalence-to-incidence ratios to Essex County's average annual crude incidence counts for the five years 1996–2000, separately for each gender. Actual prevalence is likely to be of the same order of magnitude as the estimate.¹³

^e Incidence and mortality are gender-specific, age-adjusted annual rates, not counts. A rate at least 10% higher than the corresponding state rate is shown in bold italics.

^f “All cancers” represents the sum of all invasive cancer during the time period, not just the seven cancers below.

Cancer Burden By Site

Breast Cancer

For the period from 1996 through 2000, roughly 6,721 women in Essex County were living with diagnosed breast cancer at any point in time. The breast cancer incidence rate in the county was equal to the state rate (both 138.5 per 100,000) and similar to the national rate (134.1). The

breast cancer mortality rate for women all races (as well as the rate for white and black women separately) in Essex County (34.6 per 100,000) was higher than the corresponding rates for New Jersey (31.3) and the U.S. (27.7) (Table 3.6).¹

Breast cancer incidence rates increase sharply after age 50; in Essex County, about 76% of the new breast cancer cases occurred in women aged 50 years and older, while 44% of the new cases occurred in women aged 65 years and older (Table 3.4).¹ Women aged 75 years and older had the highest breast cancer incidence rate (468.2 per 100,000) (Table 3.5).¹ The breast cancer mortality rate was highest among women aged 65 years and older (144.3) (Table 3.6b).¹ This becomes more important as the proportion of older Americans, the majority of whom are women, is increasing. In Essex County, in 2000, there were 57,718 women aged 65 years and older (Table 1.3 or 1.4a).¹ Studies have determined that older women in the nation have the highest breast cancer incidence and mortality rates yet are underscreened relative to their risk (p. 165),¹ suggesting that elderly women in good health should be screened into their 70s and 80s, which can be done at little or no financial cost to the state since Medicare covers screening annually in the population 65 years and older. For example, targeted mail interventions to Medicare beneficiaries have significantly increased mammogram screening among the elderly, especially minorities, since they increase awareness about the Medicare mammography reimbursement benefit and other low-cost screening options.¹⁴

The *Healthy New Jersey 2010*¹⁵ objective to reduce the age-adjusted breast cancer death rate for all females (target and preferred endpoints are both 21.5 per 100,000)^m will be difficult to reach, as the mortality rate for all females was 34.6 in Essex County. Furthermore, this objective will be even more difficult to reach among the county's black women (target and preferred endpoints of 28.5 and 21.5 per 100,000, respectively). Black women had a higher age-adjusted breast cancer mortality rate (37.9 per 100,000) than did white women (33.3), despite having had a lower incidence rate (115.8) than white women (154.5); this trend was also observed at both the state and national levels.

The chance that a woman will survive five years after diagnosis is generally stage-dependent, with best survival observed in women diagnosed in the earlier stages (p. 161).^{1;17} Since white women have higher incidence rates and lower mortality rates, one hypothesis is that their cancers are detected at earlier stages and are therefore more treatable.

The proportion of Essex County black women diagnosed in the *in situ/localized* stage was 56%, lower than the proportion for their white (67%) counterparts (Table 3.7).¹ The proportion of Essex County Hispanicⁿ women diagnosed in the *in situ/localized* stage was 63%.¹

^m This has been recalculated¹⁶ from the published report,¹⁵ which used the 1970 U.S. standard population. The number cited above is based on the 2000 U.S. standard population, just as incidence and mortality statistics used elsewhere herein are. Due to the increased numbers of senior citizens in 2000 this leads to a major correction in the published numeric goal. *Healthy New Jersey 2010* includes both target and preferred endpoints for objectives.

ⁿ Hispanics and non-Hispanics may be of any race. Racial categories include both Hispanics and non-Hispanics. Data on non-Hispanics are not available. Comparisons of Hispanic rates with rates for the whole population may underestimate the difference between Hispanics and non-Hispanics because Hispanics are included in the total population.

One factor that may contribute to later stage diagnosis in black women is delayed access to screening services. Barriers to screening services include but are not limited to lack of knowledge about screening, fear of cancer diagnosis, and, in lower income populations, lack of insurance and prioritization of social and medical needs (prevention often takes a back seat to acute medical conditions and/or working, providing food and shelter for family). In addition to the socioeconomic and cultural factors that contribute to later stage diagnosis and poorer survival in black women, there may be differences in the tumor biology between black women and women of other races. For example, a recent randomized controlled study found that tumors from African-American women tend to have features characteristic of more aggressively and rapidly growing cancers, even when corrected for stage.^{18;19}

Among 3,923 New Jersey women aged 50 and over who were interviewed from 2000 through 2002, 78% reported having had a mammogram within the past two years.^{20;21} Based on interviews of 327 women in the county, the screening rate in Essex County did not differ significantly from that in the state overall; however, the screening rate both in Essex County and in the state overall increased significantly during the period 1992–2002.²¹ As there are 120,553 women aged 50 and over in the county, applying the statewide screening percentage to Essex County would suggest that approximately 94,000 mammograms over a two-year period were conducted in this age group alone.²¹

The U.S. Preventive Services Task Force (USPSTF) and ACS recommend that women over 40 be screened with mammography every one to two years. In 2000, there were 181,759 women over 40 living in Essex County, and 38% were black (Table 1.4b).¹ Since black women in Essex County constitute over one-third of the female population and bear a proportionately greater burden of breast cancer mortality and higher rates of late (regional and distant) stage diagnosis, special efforts are necessary to reach the 68,940 black women in the county to minimize delayed access to screening services, thereby facilitating increases in early diagnosis and treatment of the disease. The majority of these women, 86%, reside in the four inner-city municipalities (Table 1.4b).¹

When income is considered, BRFSS data indicate that in 2002 New Jersey adults with household incomes under \$15,000 annually were less likely to have mammograms than those with higher incomes.²⁰ Assuming that the same pattern applies in Essex County, as in the state, this means that the county's minority groups and the pockets of populations considered medically underserved are less likely to have had a mammogram in the past year. In order to reduce the breast cancer burden in Essex County, there is a need to focus on the black and Hispanic populations, especially those who live below the poverty line, as well as the populations residing in medically underserved zip codes.

Cervical Cancer

Essex County accounted for 13% of the 2,469 cases cervical cancer cases reported in the state for the period from 1996–2000 (Table 3.13), although the county contains only 9.6% of the state's female population.³ Approximately 1,120 women in Essex County were living with diagnosed cervical cancer at any point in time from 1996 through 2000 (Table 3.21).¹

When detected early by Papanicolaou (“Pap”) test, invasive cervical cancer is highly treatable. Pap tests detect some precancerous as well cancerous lesions. Some health insurance companies have moved to cover a more sensitive and specific screening test, the AutoPap, which uses a thin preparation of cells along with computer-assisted technology.² Women who do not receive regular Pap tests have a higher risk for the condition. In fact, routine screening has decreased the incidence of invasive cervical cancer in the United States.²² Human papillomavirus (HPV), a sexually transmitted disease, is the most significant risk factor for developing cervical cancer; recommendations for the incorporation of HPV testing^o as part of a pelvic examination have been developed by the American College of Obstetricians and Gynecologists.^{2,23} Risk factors for cervical cancer include ever being sexually active, lack of routine screening, early onset of sexual intercourse, a history of multiple partners, a history of sexually transmitted infections (especially HPV), obesity, and smoking.² All women need to be educated about the association of HPV with cervical cancer.

The incidence rate of cervical cancer for all women in Essex County (15.7 per 100,000) was higher than the state (10.9) and national (9.5) rates (Table 3.14);¹² furthermore, the incidence rates for Essex County were higher than those for the state in all age groups (Table 3.16). Within the county, the cervical cancer incidence rate for black women (23.0 per 100,000) was 2.2 times higher than that for white women (10.5). The cervical cancer incidence rate for black women in Essex County exceeded that for the state (17.9) and the U.S. (13.9) (Table 3.15).¹²

The risk of invasive cervical cancer is greater in women 40 years and older than in younger women. There is a trend in the state for later diagnosis with advancing age; Essex County follows this trend overall, but there are slight differences. In Essex County, more women aged 15–39 (49%) were diagnosed with localized stage cervical cancer than women in any other age group; however, this was lower than the corresponding state percentage (62%). As observed for the state, the age group 75 and over has the highest percent (21%) of patients diagnosed in the distant stage and the lowest percent (24%) diagnosed in the localized stage versus any other age groups in Essex County (Table 3.20).¹

The mortality rate due to cervical cancer in Essex County for the period 1996–2000 was 5.0 per 100,000. This was the highest rate among the counties in New Jersey, and exceeded state (3.1) and national (3.0) rates. However, the county’s mortality rate of cervical cancer has been exhibiting a declining trend during the period 1976–2000 (Table 3.17).¹ The cervical cancer mortality rate for black women in the county (7.9 per 100,000) was 2.3 times higher than that of white women in the county (3.4) (Table 3.18). Black women had a higher combined percentage of regional and distant stage disease at diagnosis (47%) than did white women (31%), and this may be associated with their poorer survival (Table 3.19).¹ Since the Pap test is effective in detecting cervical cancer early and the disease is very curable when detected early, the fact that Essex County has such high cervical cancer incidence and mortality rates in black women indicates a lack of adequate prevention efforts. Among 7,689 New Jersey women with no history of hysterectomy who were interviewed from 2000 through 2002, 83% reported having had a Pap test within the past three years.^{20,21} Based on interviews of 665 women in the county, the screening rate in Essex County did not differ significantly from that in the state overall.²¹ Despite this high rate of screening, it would appear that black women should be the focus of additional

^o For example, the ViraPap™ will detect which strains of HPV DNA, if any, are present.

early detection programs to decrease the elevated incidence and mortality rates and facilitate earlier stage of diagnosis. There is a need, in particular, to obtain and track over time the cervical cancer screening rates among black women in Essex County.

Colorectal Cancer

Colorectal cancer is preventable when polyps are detected and treated, and curable when diagnosed early. Nine out of 10 people, whose colorectal cancer is found and treated at an early stage, before it has spread, live at least five years. Once the cancer has spread to nearby organs or lymph nodes, the five-year survival rate falls to 65%. If the cancer has already spread to distant parts of the body, such as the liver or lungs, the five-year survival rate is 9.0%.¹⁷

Both the ACS and the USPSTF recommend that clinicians screen all men and women aged 50 years and older for colorectal cancer using one of the following screening methods: (1) annual fecal occult blood test (FOBT), (2) flexible sigmoidoscopy every five years; (3) annual FOBT plus flexible sigmoidoscopy every five years, (4) double-contrast barium enema every five years, or (5) colonoscopy every 10 years.

In 2000, there were a total of 211,092 people (90,539 men and 120,553 women) aged 50 years and older living in Essex County (Table 1.4b).¹ During the period 1996–2000, approximately 1,209 men and 1,895 women were living in Essex County with diagnosed colorectal cancer (Table 3.34). Colorectal cancer incidence rates for both men and women in Essex County (74.7 and 54.5 per 100,000, respectively) were fairly consistent with the corresponding state rates for men and women (79.0 and 54.4, respectively). While there was no significant time trend in colorectal cancer incidence rates for men, the incidence rate for women of all races exhibited a significant declining trend from 1996–2000 ($p < 0.01$, slope = -2.4) (Figure 3.4).¹ Colorectal cancer mortality rates were similar in the county and the state for men (30.5 versus 29.5 for county and state, respectively) and for women (20.6 versus 20.1 for the county and state, respectively) (Tables 3.28 and 3.29).¹ More men die from the disease than women across all racial and ethnic groups for which separate statistics were available.

In Essex County, the colorectal cancer incidence rate in black men (77.0 per 100,000) was only slightly higher than in white men (73.0) (Table 3.22). Nevertheless, black men in the county had a higher mortality rate (37.2) than did their white counterparts (27.9) (Table 3.28). The colorectal cancer incidence and mortality rates for Hispanic men were 51.2 and 13.1 per 100,000, respectively (Table 3.28). While the colorectal cancer incidence rate for black women in the county (55.8) was similar to that for white women (53.7), black women had a higher mortality rate (24.5) than did white women (18.5). Hispanic women in the county had a colorectal cancer incidence rate of 44.2 and a mortality rate of 6.7 per 100,000 (Tables 3.23 and 3.29).¹

The incidence of colorectal cancer increases with age, and more than 9 in 10 new cases were diagnosed in both men and women aged 50 and over in Essex County (1996–2000). In fact, colorectal cancer incidence rates more than doubled at age 65, for both men and women. Thus, intervention efforts should focus on men and women aged 50 and over, a population that constitutes 27% of the county's population. Among 4,961 New Jersey adults aged 50 and over who were interviewed from 2001 through 2002, 56% reported having had colorectal cancer

screening (either with a fecal occult blood test (FOBT) within the past year or a sigmoidoscopy or colonoscopy ever); based on interviews 384 men and women within the county, the screening rate in Essex County did not differ significantly from that in the state overall.^{20;21} A significant (linear) increase ($p < 0.05$) in screening levels was detected for the state as a whole and for Essex County for the period from 1992 through 2002.^{20;21} BRFSS data suggest that 118,212 (56%) of the 211,092 persons aged 50 or over in Essex County reported having received colorectal cancer screening.²¹ Yet, according to data from the National Cancer Institute's (NCI's) Cancer Information Services (CIS),^p 15,286 women and 12,550 men live in medically underserved clusters in Essex County in need of colorectal cancer screening, the majority of which reside in Newark, West Orange (bordering Orange), and Montclair.²⁴ Thus, BRFSS data for these localized regions within Essex County would be helpful to confirm actual need (e.g., whether or not the necessary screening is occurring). These data would assist the county in determining how to best focus future screening efforts.

Lung Cancer

Lung cancer is the leading cause of cancer death for both men and women in the U.S. Smoking is the leading risk factor for lung cancer, and 87% of lung cancer cases are smoking related. Exposure to environmental tobacco smoke, or "second-hand" smoke, remains an additional important issue.² Changing temporal patterns in the occurrence of lung cancer are closely tied to historic cigarette smoking patterns, with the regular uptake of smoking and subsequent smoking reductions occurring later in women compared with men. Since 1987 more women have died each year from lung cancer than from breast cancer; however, after several decades of increases in lung cancer deaths, mortality rates have stabilized for the first time since 1995 (p. 214).¹

Approximately 421 men and 490 women in Essex County were living with diagnosed lung cancer at any point in time during the period 1996–2000 (Table 3.45).¹ The lung cancer incidence rate for men of all races was slightly higher in the county (96.8 per 100,000) than in the state (92.5), while the lung cancer incidence rate for women was lower in the county (51.1) than in the state (55.4) (Tables 3.38 and 3.39).¹

Essex County minority men had higher age-adjusted lung cancer incidence rates than the rest of the state; both black men and Hispanic men in Essex County had higher incidence rates (128.9 and 76.0 per 100,000, respectively) than did black men and Hispanic men in the state (118.1 and 67.2, respectively). White men in the county had a lower lung cancer incidence rate (81.1 per 100,000) than did white men in the state (91.0). In contrast to men in the county, black women and white women in the county had the same lung cancer incidence rate (51.0 per 100,000); Hispanic women had a low lung cancer incidence rate (28.7), as they did statewide (26.8) (Tables 3.38 and 3.39).¹

^p Consumer Health Profile maps of each New Jersey county were provided in June 2003 to the NJDHSS and UMDNJ and each county by the National Cancer Institute's Atlantic Region Cancer Information Service, along with ongoing technical support. (More information can be obtained from: 1-800-4-CANCER.) The data categorize the U.S. population into 62 groups based upon characteristics such as geography, demographics, lifestyle, and socioeconomic status. Within these 62 groups, 30 are classified as medically underserved.²⁴

The incidence of lung cancer increased sharply with age, especially after 50 years, for both men and women in the county (Figure 3.7).¹ The increase in incidence rate with age was more pronounced among men and continued to rise with age.

In Essex County, the lung cancer mortality rate for men (76.9 per 100,000) was nearly twice as high as that for women (38.9) (Tables 3.43 and 3.44).¹ The county lung cancer mortality rate for black men (104.3 per 100,000) was 60% higher than that for white men (65.0), and was similar to the rate for black men in the state (100.0) and in the U.S. (107.0). The lung cancer mortality rate for Hispanic men was higher in the county (42.1 per 100,000) than in the state (35.5). For women in the county, the disparity in lung cancer mortality was less substantial; the lung cancer mortality rate for black women (42.4 per 100,000) was 14% higher than that for white women (37.3), while the corresponding rates for black women and white women in the state were similar (41.8 versus 42.5 for black women and white women, respectively). The lung cancer mortality rate for Hispanic women was slightly higher in the county (12.5) than in the state (10.9).

Melanoma of the Skin

Melanoma is primarily a disease of whites, and this population constitutes only 44% of the county's population, compared to 73% for the state. The Essex County melanoma incidence rates were generally lower than those of the state (14.1 versus 20.1 per 100,000 for men of all races in the county and in the state, respectively; 8.5 versus 11.9 per 100,000 for women of all races in the county and in the state, respectively), with the exception of white women, who had an incidence rate equal to that of white women in the state (13.9) and slightly higher than that of white women in the U.S. (13.4).

In Essex County, the melanoma incidence rates for white women (13.9 per 100,000) and white men (21.7) are far from the *Healthy New Jersey 2010* objectives for white women (target and preferred endpoints of 7.7 and 7.0 per 100,000, respectively)^m and white men (target and preferred endpoints of 12.4 and 11.3, respectively) (Table 3.62).¹ In the case of melanoma incidence, the county rate was lower than the corresponding state or national rate when comparing rates for women of all races because of the relatively small fraction of white women in Essex County, but equal to the corresponding state or national rates when comparing rates for only white women (Table 3.49).¹ The incidence rate of melanoma in Essex County for white men was 21.7 per 100,000. The number of melanoma cases among black men in the county was too low to compute a rate; even at the state level, the melanoma incidence rate among black men was less than 1.0 per 100,000 (Table 3.50).¹ The incidence rates of melanoma both in the county and in the state increased sharply after age 50. Of the 223 new cases of melanoma among men during the period 1996–2000, 39% occurred among men aged 50 to 64 years (Table 3.53).¹

Although the number of deaths due to melanoma were few in the county, an average of 250 melanoma deaths occurred annually for the five-year period in New Jersey (p. 237).¹² The melanoma mortality rates were lower in Essex County than in New Jersey for both men (2.7 versus 4.4 per 100,000 for county and state, respectively) and women (1.0 versus 1.9 per 100,000 for county and state, respectively). When examined by race, both white men and women had the highest mortality rate among all races (3.9 and 1.4 per 100,000, respectively), but both of these

rates were lower than the corresponding rates for the state (4.9 and 2.0 for white men and women, respectively) and nation (4.4 and 2.2 for white men and women, respectively).

Very few cases of melanoma were diagnosed in the regional and distant stages in both men (6.2%) and women (5.0%) in Essex County (Tables 3.57 and 3.58).¹ Statewide, 18% of melanoma cases among Hispanic men, 14% of cases among white men, and 23% of cases among black men were diagnosed in the regional and distant stages.

Oral and Oropharyngeal Cancer

Oral and oropharyngeal cancer is a significant but underpublicized health problem in New Jersey and Essex County. Mortality from this group of cancers remains high and survival has not improved over the past 40 years, which is particularly unfortunate because oral/oropharyngeal cancer can be among the most preventable and treatable. Despite the fact that, nationally, oral/oropharyngeal cancer is the 8th most common cancer among white men and the 4th most common among black men,⁷ the general public has limited awareness of cancers in this body region. Whereas early-stage oral/oropharyngeal cancer has a high cure rate, the prognosis for late-stage cancer remains poor. Thus, screening and early detection are extremely important. Medical personnel, such as general practitioners, are traditionally associated with cancer screening. In contrast, for these tumors, early detection is possible amongst patients who visit their dentist for routine care if a thorough oral cancer examination is conducted. Since dentists and dental hygienists may not routinely discuss cancer screening and risk factors with their patients, there is a continued need for outreach to dental professionals to increase awareness. Furthermore, given the advent of brush biopsies to assess very small oral lesions, there is an increasing role for the general dental practitioner in the early detection of oral cancer.⁹

According to Census 2000, there were 377,533 men and 416,100 women in Essex County. Among them, approximately 379 men and 257 women were living with diagnosed oral and oropharyngeal cancer at any point in time during the period 1996–2000 (Table 3.77).¹ Men in general and black men in particular manifest higher incidence rates of oral/oropharyngeal cancer than women in the county, state, and nation. The oral/oropharyngeal cancer incidence rate was at least twice as high for white men than for white women in both the county and the state, and three to four times higher for black men than for black women in the county and in the state (Table 3.63).¹

For this same period, nearly one in 10 (9.8%) of the oral/oropharyngeal cancers that occurred among men in New Jersey (2,960 cases) occurred among men in Essex County (289 cases), a proportion that is comparable to Essex County's fraction of the state's male population (9.2%).³ The oral/oropharyngeal cancer incidence rate for men was slightly higher in the county (17.7 per 100,000) than in the state (15.7). **The county oral/oropharyngeal cancer mortality rate for**

⁹ Prior to the advent of brush biopsies, evaluation of suspicious lesions required referral to an oral surgeon for an excisional biopsy. Brush biopsies can be conveniently performed on very small lesions by trained general practitioners, and only patients with positive results need to be referred to an oral surgeon. It is hoped that this change in diagnostic practice will lead to detection and treatment of lesions at earlier stages.

men (5.6 per 100,000) ranked among the highest in New Jersey.^{r,12} This county rate was 33% higher than the corresponding state rate (4.2) and 27% higher than the corresponding national rate (4.4) (Table 3.70).¹

The black population, especially black men, bears a disproportionate burden of oral cancer incidence and mortality in Essex County, as in the state. The oral/oropharyngeal cancer incidence rate for black men in Essex County (27.3 per 100,000) surpassed that for the state (22.8) and was more than twice the rate for white men in the county (12.6). In fact, cases among black men in Essex County accounted for one-third (34%) of all oral and oropharyngeal cancer cases among black men in the state, even though only 28% of black men in the state live in Essex County. For Hispanic men in the county, the oral/oropharyngeal cancer incidence rate was 11.3 per 100,000.

As with incidence, black men had by far the highest oral/oropharyngeal cancer mortality rate (9.9 per 100,000) in Essex County, a rate that was three times higher than the rate for white men in the county (3.4), similar to the state rate for black men (9.6), and 25% higher than the national rate for black men (7.9).

For women, the oral/oropharyngeal cancer incidence rate was only slightly higher in Essex County (6.9 per 100,000) than in the state (6.4). Within the county, black women had a higher incidence rate (7.2) than white women (6.3). Hispanic women in Essex County had an oral/oropharyngeal cancer incidence rate of 7.0 per 100,000 (Tables 3.64 and 3.66).¹ Similar to black men, cases among black women in Essex County accounted for nearly one-third (32%) of all oral/oropharyngeal cancer cases among black women in the state, while black women in Essex County comprised 30% of the black female population in the state.

The county oral/oropharyngeal cancer mortality rate for women of all races (2.6 per 100,000) ranked the highest among the New Jersey counties for which data were reported.¹² This rate was more than twice the corresponding state and national rates (1.6 and 1.7, respectively) (Table 3.70).¹ Of even greater concern is the fact that, although there was no statistical significance between the incidence rate for black women (7.2 per 100,000) and white women (6.3), the oral/oropharyngeal cancer mortality rate for black women (4.1) was statistically significantly higher than the mortality rate for white women (1.5) ($p < 0.001$). The county mortality rate for black women exceeded the corresponding state rate (2.7) and was twice the corresponding national rate (2.0).

In New Jersey, 58% of the oral/oropharyngeal cancer cases in men, and 45% of cases in women, were diagnosed at regional or distant stages during the period 1996–2000; in comparison, 65% of oral/oropharyngeal cancer cases in men and 52% of cases in women were diagnosed in the regional and distant stages in Essex County during this same period. A closer look at these data shows that black men were more likely to be diagnosed in the regional or distant stage (69%) than were white men (59%) (Table 3.72). (Although the percentage of late-stage diagnoses in Hispanic men (88%) was very high, this percentage was based on a small number of oral/oropharyngeal cancer cases). Similarly, black women in Essex County had a higher

^r Essex County ranked second highest among New Jersey counties for which data were reported; Hudson County had the highest oral/oropharyngeal cancer mortality rate for males (5.8 per 100,000) in New Jersey.

percentage of late-stage diagnoses of oral/oropharyngeal cancer (58%) compared to white women (47%) (Table 3.73).¹

The oral/oropharyngeal cancer incidence rate among men in Essex County was highest in the group aged 65–74 years, although 43% of the cases were among the group aged 50–64 years. Essex County men aged 65–74 years and 75 years and older had the largest fraction of cases diagnosed in the distant stage (14% and 11%, respectively). The oral/oropharyngeal cancer incidence rate among Essex County women was highest among women aged 75 and older; further, the oral/oropharyngeal cancer incidence rate decreased significantly over the period 1996–2000 among women aged 75 years and older ($p < 0.01$, slope = -7.5) (Table 3.65 and 3.67).¹ The percentage of *in situ*/localized oral/oropharyngeal cancer diagnoses did not differ greatly between Essex County (38%) and New Jersey (41%); these corresponding percentages were similar across age groups as well (Table 3.76).¹

Prostate Cancer

In Essex County, a total of 3,476 new cases of prostate cancer were reported during the period 1996–2000, which represented nearly 10% of prostate cancer cases statewide (35,359). Prostate cancer was estimated to be the 2nd most prevalent cancer among the total population, and the most prevalent cancer among the male population in Essex County, with roughly 5,089 men living with prostate cancer at any point in time during the period 1996–2000, an estimate obtained by applying the national prevalence-to-incidence ratio to Essex County.¹³

The prostate cancer incidence rate for men of all races was 227.4 per 100,000 in Essex County, compared to 194.3 in the state and 162.0 in the nation. County prostate cancer incidence rates for all racial groups were higher than those of the state and the U.S. (Table 3.78 and 3.79).¹ The county and state prostate cancer incidence rates for black men were nearly equal (288.4 and 282.9 per 100,000 for county and state, respectively). These rates for black men exceeded those of white men (199.5 and 186.4 per 100,000 for county and state, respectively). Thus, most but not all of the disparity in prostate cancer incidence between Essex County and the rest of the state can be accounted for by the much higher proportion of black men in the county.

The Essex County prostate cancer mortality rate (39.5 per 100,000) was highest among New Jersey's 21 counties (Table 3.83).¹ The prostate cancer mortality rate for black men was higher in the county (72.4 per 100,000) than in the state (68.8). Within the county, the prostate cancer mortality rate for black men was over two and a half times that for white men (27.8). In addition, long-term trends (over the period 1976–2000) in the county indicate that the prostate cancer mortality rate was rising for black men, while declining for white men (Table 3.82).¹

It is not known why blacks are at greater risk of dying from this disease. After controlling for age and stage of diagnosis, the relative risk of cancer death once prostate cancer is diagnosed is 2nd highest in black men (1st in American Indian men).²⁵ Low socioeconomic status, low literacy rates, and lack of health insurance can delay diagnosis and reduce access to optimal therapies.

Prostate cancer incidence rates were higher in Essex County than in the state across all age groups. As in the state, Essex County prostate cancer incidence rates among men aged 65–74

years and men aged 75+ years (1,277.6 and 1,279.1 per 100,000, respectively) were 50 times higher than the rate among men aged 40–49 years (24.2). In 2000, there were 36,662 men in the county aged 65 years and older (9.7% of male population) (Table 3.81 and 1.3A).

Special attention should be paid to, *but not limited to*, the four inner-city municipalities, where the black male population is concentrated. In these four municipalities, there was a total of 129,234 black men (86% of all black men in the county) and 26,107 black men aged 50 and over (88% of all black men in the county in this age group) – the age group of risk for prostate cancer (Table 1.4b).^{1,3}

Although the prostate-specific antigen (PSA) test is widely recommended for early detection and prevention of prostate cancer, the effectiveness of PSA screening in reducing cancer morbidity is uncertain, and the diagnostic testing and treatment that follows carry serious risks.^{26,27} Therefore, education on prostate cancer screening and the associated risks and benefits must be concentrated on these populations of focus as a whole, so that each individual can make an informed decision about whether or not to undergo screening. This may prove a challenge, especially among minority and older men where deterrents to screening already exist, such as fear of diagnosis. The education must be delivered in a culturally sensitive and balanced manner so as not to further deter populations with existing misconceptions about the disease and its prevention, but at the same time to inform them about its benefits and harms.

Other Cancer Sites/Areas

Below we discuss the relationship between cancer and HIV, bladder cancer, and childhood cancer.

HIV/AIDS. AIDS – acquired immunodeficiency syndrome – was first reported in the U.S. in 1981 and has since become a worldwide epidemic. The human immunodeficiency virus (HIV) is the etiologic agent of the acquired immunodeficiency syndrome (AIDS) and is associated with the development of several specific cancers.² The number of cumulative AIDS cases among residents of New Jersey as of June 2003 ranked 5th highest in the nation and 4th highest when minority populations alone were considered. Essex County ranks 1st amongst all New Jersey counties in prevalence for HIV/AIDS.²⁹ The populations at increased risk for HIV/AIDS include injection drug users, females who have sex with males who are at increased risk, males who have sex with males, children born to mothers who are HIV-infected, and persons with multiple sex partners. Of note, persons who are homeless, have a history of incarceration, or involvement in the commercial sex trade tend to be at increased risk (pp. 288).¹ Both healthcare providers and patients need to understand these risks.

In 2003, Essex County accounted for 13,434 AIDS cases, which is more than 30% of the total cases in the state (45,256).²⁹ As of December 31, 2002, Newark (101 cases per 100,000) and East Orange (99 cases per 100,000) reported the two highest incidence rates of infection in New Jersey. Currently, Essex County accounts for 29% (8,610) of people living with HIV in the state. In 2000, Essex County accounted for 295 (36%) of the HIV/AIDS-related deaths in New Jersey, and the majority of these deaths (90%) occurred amongst residents of East Orange, Irvington, and Newark.²⁹

With the introduction of highly active antiretroviral therapy (HAART) into medical care in 1996, there have been decreases in the incidence of and mortality due to HIV-associated opportunistic infections.^{30;31} Although incidence of Kaposi's sarcoma has decreased from 1992–1998, incidence rates of other neoplasms such as immunoblastic lymphoma, invasive cervical cancer, Hodgkin's lymphoma, and Burkitt's lymphoma have not.³⁰ Adverse effects from HAART therapy need to be further understood. AIDS patients are living longer due to HAART therapy. As patients with HIV live longer, it is important to monitor all causes of mortality to identify changes.³⁰⁻³²

Detection and treatment of cancer(s) in persons infected with HIV are most efficiently done by providing integrated healthcare services to persons at HIV risk. Given the rising incidence, these services need to be maintained, at the very least, or expanded. For example, the Newark Homeless Health Care Project, which is a part of the Newark Department of Health and Human Services, provides an array of cancer screening services in their adult medical clinic to the homeless population. These include cervical cancer screening, mammography, PSA tests, colorectal cancer screening, routine physical exams and laboratory tests, as well as patient support for HIV patients (p. 292).^{1;8} Such services should also be routinely offered on-site at primary healthcare settings, drug treatment programs, and AIDS clinics in Essex County.²

There is a looming risk of hepatocellular (liver) cancer due to a high prevalence of infection with hepatitis C virus (HCV) and hepatitis B virus in Essex County.^{2;33} HCV coinfection is also common among HIV-infected persons. In Essex County in particular, an increase in hospitalizations due to chronic liver disease is anticipated.^{30;31}

Bladder cancer. New Jersey's bladder cancer^s incidence and mortality rates were higher than the nation for all racial and ethnic categories.¹² Mortality due to bladder cancer was higher in New Jersey than in the nation overall. The ACS estimated that bladder cancer in 2003 would be the 6th most common cause of cancer mortality in the U.S. and the 5th most common in New Jersey.¹⁷ The bladder cancer incidence rate for Essex County (21.0 per 100,000) was lower than the state rate (25.3). There are gender and racial disparities in bladder cancer mortality rates (Table 3.90).¹ The bladder cancer mortality rate for men of all races (9.3 per 100,000) was over two and a half times higher than that of women (3.6). Among men alone, whites had a bladder cancer mortality rate of 10.7 per 100,000, which was nearly twice that of blacks (5.4). The bladder cancer mortality rate for Hispanic men was also high (7.4). In contrast, among women, blacks had the highest bladder cancer mortality rate (4.7 per 100,000), 1.5 times higher than the rate for white women (3.0). The bladder cancer mortality rate among Hispanic women was 2.6 per 100,000 (Table 3.89).

It is not yet known exactly what causes bladder cancer, but it is known that certain risk factors are linked to the disease, the most important being smoking. Cigarette smokers are two to three times more likely than nonsmokers to get bladder cancer.²⁸ Since there is no certain way to prevent bladder cancer, the best way to lower one's risk is not to smoke.

^s Invasive and *in situ* bladder cancers are both included in standard statistical tables. See "[United States Cancer Statistics: 2001 Incidence and Mortality Web-based Report](http://apps.nccd.cdc.gov/uscs/TableV.asp?group=1a&Year=2001&Gender=FEM&RateType=AgeadjType&TableType=INCI)" footnotes at <http://apps.nccd.cdc.gov/uscs/TableV.asp?group=1a&Year=2001&Gender=FEM&RateType=AgeadjType&TableType=INCI> - Footnotes

Childhood cancers. In New Jersey, the most common types of cancer in children aged 14 years and younger were leukemia (accounting for about 30% of childhood cancer cases) and central nervous system cancers (accounting for 20% of childhood cancer cases) (Figure 3.9).¹ The total childhood cancer incidence rate from 1979–1995 for Essex County (13.0 per 100,000) was lower than the corresponding rates for the state (14.3) and the nation (13.6) (Table 3.94).¹

As mentioned in Section 2, Essex County has two local cancer programs that provide special pediatric and young adult cancer services (Saint Barnabas Medical Center and Newark Beth Israel Medical Center), for which greater public awareness needs to be generated.

Summary of Populations of Focus for Priority Cancers

Below we summarize populations of focus for priority cancers in Essex County, including those with low socioeconomic status, minority populations, the elderly, and smokers.

Low socioeconomic status

A substantial proportion of men and women in the county do not have access to private health insurance, lack access to a regular source of healthcare, and lack adequate financial resources. According to the NCI's CIS data, there are 165,153 women and 139,558 men in Essex County who are members of medically underserved population clusters (and therefore likely to lack health insurance and/or Medicaid) residing in the zip codes of Montclair, West Orange, Newark, Belleville, Nutley, East Orange, Irvington, and Bloomfield (Table 2.12b).¹

Those populations with lower levels of power and resources are at increased risk for health problems, including increased mortality from cancer. Race and ethnicity often interact dynamically with socioeconomic factors to influence health status and behaviors.³⁴ Of Essex County's population aged 18 years and older whose poverty status was determined, blacks and whites comprised 57% and 25%, respectively, of those with income below poverty level. Hispanics (of any race) comprised 23% and non-Hispanic whites comprised 16% of the county's population below poverty level in 1999 (Table 1.20A).¹ These populations may not have adequate access to healthcare services, such as screening and treatment.

Minority populations

In Essex County, minority populations, especially blacks, bear the most substantial burden of cancer mortality. The majority of the black population of Essex County (86%) resides in Newark, Irvington, East Orange, and Orange. Other minority groups raise special issues as well, related to culture, language, and access to care. Although there are concerns that minorities bear disproportionate portions of the cancer burden, their limited numbers lead to their omission from many sources of statistical data. Thus, precise numbers and rates are not readily available and are not portrayed explicitly. For example, in Essex County, although there are regions with special populations exceeding 3% – which include Asian populations (n=29,429) (Table 1.7)¹ and also French- and French-Creole-speaking populations (n=24,874; including some Haitians) and Portuguese populations (n=23,744) (Table 1.11)¹ – cancer data for these groups are not available.

Even the data on Hispanics (n=122,347), who comprise 15% of the county's population, are limited (Table 1.7 and 1.8).¹

Black females. A special effort is necessary to reach this population since they bear a disproportionate burden of breast, cervical, colorectal, and oral cancer mortality compared to other female races/ethnicities. In 2000, there were 68,940 black females aged 40 years and older in Essex County, constituting 38% of all females in this age group. Black females in Essex County aged 40 years and older are at increased risk of dying from breast cancer and cervical cancer than are white females in the same age group. In 2000, there were 44,109 black females aged 50 years and older in Essex County, constituting 37% of all females in this age group (Table 1.4b).¹ Black females aged 50 years and older should be a population of focus for colorectal and oral cancer screening, education, and awareness.

Black males. This population bears a disproportionate burden of colorectal, lung, oral, and prostate cancer mortality compared to other races/ethnicities. Black males, especially those aged 50 years and older, should be the focus of screening, education, and awareness efforts for prostate, colorectal, and oral cancer. In 2000, there were 29,671 black males aged 50 years and older in Essex County, constituting 33% of all males in this age group (Table 1.4b).

Hispanic females and males. Analysis of cancer incidence and mortality rates for Hispanics alone does not necessarily illustrate the true burden of health problems and cancer survival that Hispanics are experiencing. Census 2000 data³ show that 14.8% of the county's population aged five years and over spoke Spanish or Spanish-Creole at home (the largest segment of the population in Essex County primarily speaking a language other than English at home) (Table 1.10 and 1.11).¹ In 2000, there were 53,751 residents aged five years and over living in 21,890 linguistically isolated households (7.5); of these, residents in 11,492 linguistically isolated households spoke Spanish (Tables 1.10 and 1.12).¹ Of these Spanish-speaking households, 90% were located in Newark, Orange, Belleville, Irvington, and West Orange combined (Table 1.12).¹

Linguistic isolation, and related factors such as lack of health insurance or other means to pay for service, lack of routine healthcare, lack of health provider recommendation, personal experience, and/or lack of knowledge about cancer and prevention, may provide some insight into the true health situation of Hispanics in Essex County, since studies on access to care reveal a relationship between language barrier and appropriate access to care. For example, Roche et al.³⁵ determined in a northeastern New Jersey region including Essex County, that the relative risk of women residing in this region being diagnosed in the distant stage compared to the state was 2.4 (p<0.01). The population in this region were comprised of higher proportions of linguistically isolated households among other demographic characteristics (higher proportions of black women, foreign-born persons, and adults without a high school diploma, and lower per capita income than persons in rest of state).³⁵ These data and others from the literature show that persons living in linguistically isolated households are less likely to access prevention services, visit private doctors, or interact effectively with their healthcare providers during health visits, factors that often contribute to poor health outcomes.⁴⁻⁶

Elderly

Cancer incidence and mortality increase with age. In 2000, there were 57,949 females and 36,431 males aged 65 years and older living in Essex County (Table 1.5).¹ The largest numbers of these resided in Newark (25,559), East Orange (7,931), West Orange (7,860), and Bloomfield (6,803), although particularly high concentrations of persons aged 65 and older could be found in Cedar Grove (22.6% of the population), Roseland (19.6%), Verona (19.2%), West Caldwell (18.9%), and Caldwell (18.0%). These data suggest the need to focus interventions on these suburban municipalities as well as on the four inner-city municipalities in order to minimize poor outcomes for those cancers where age is a major risk factor (such as breast, colorectal, melanoma, oral, prostate, and bladder cancers). More importantly, intervention efforts should begin with the residents aged 50 to 64 years in order to minimize risk as they enter the high-risk age group of 65 and older (pp. 312).¹

Population at risk from smoking

Smoking is the leading risk factor for lung cancer, and most lung cancer cases (87%) are smoking related. Exposure to environmental tobacco (“second-hand”) smoke is also an important issue. Quitting smoking reduces lung cancer risk significantly, although former smokers are still at greater risk compared to people who never smoked. Risk declines with the number of years of smoke-free living. Smoking is also responsible for most cancers of the oral cavity (as well as larynx and esophagus) and bladder. In addition, smoking is highly associated with the development of, and deaths from, cervical cancer.

An estimated 133,044 adult and adolescent tobacco smokers in 2001 resided in Essex County (p. 46,312).¹ Smokers of non-tobacco products plus those at risk from second-hand exposure further increase the numbers. According to the NCI’s CIS, 304,711 residents aged 18 and over are at risk of smoking according to factors such as age, poverty status, and race/ethnicity. In Section 1 it was shown that the county has a younger median age (34.7 years) compared to the state (36.7 years), a poverty percentage nearly twice that of the state, and a large minority population – comprising the highest percentage of blacks (41%) of all counties in the state, as well as a substantial percentage of Hispanics (15%) (Tables 1.3, 1.7, and 1.20).¹ Therefore, since a large portion of the 304,711 residents may not currently smoke but may be at risk for smoking, interventions that incorporate education about the dangers of smoking must be broadly directed to all the diverse populations in Essex County to prevent these residents from taking up the habit.

Although hospitals, most notably Newark Beth Israel Medical Center and Saint Barnabas Medical Center currently offer smoking cessation programs,⁸ a sizeable proportion of the smoking population is excluded from taking advantage of them (p. 87). More programs need to be provided in community-based organizations, health centers, local churches, private physicians’ offices, emergency rooms, and/or homeless shelters where the population in need can access them.

Section 4 – Discussion, Analysis and Recommendations

The Essex County Cancer Capacity and Needs Assessment document is intended to provide a foundation on which local cancer control efforts can be based. It is anticipated that the document will serve as an informational tool for health officials seeking to understand and address area health priorities, and thus provide a foundation for completing the county's public health performance instrument for the Public Health Practice Standards Program of the Centers for Disease Control and Prevention (CDC).

The contrast in sociodemographics – most notably disparities in age, income and poverty, education, and race/ethnicity – between Essex County's inner-city and non-inner-city urban municipalities poses challenges to cancer prevention interventions in the county as a whole. In general, interventions to increase access to and utilization of screening and early detection should focus on the largely medically underserved minority populations residing in the four inner-city municipalities of Newark, East Orange, Orange, and Irvington, whereas interventions designed to promote education and awareness of cancer risk factors associated with age should focus on the large percentage of the aging population residing in the majority of the more affluent non-inner-city municipalities. However, such implementation should be done with caution so as not to overlook residents in need, as there are pockets of medically underserved in the more affluent non-inner-city municipalities, just as there are underserved elderly residents in the inner-city municipalities.

Recommendations for County and Local Priorities

Goal ESS – 1. Change attitudes, beliefs, and screening behaviors for breast, cervical, prostate and colorectal cancers, including facilitation of improved screening of minorities (especially blacks), of the elderly, and of lower socioeconomic populations, since these have especially high mortality rates and tend to be diagnosed in later stages.

- **Objective ESS – 1.1.** Reduce the multiple barriers to care and encourage people to change interrelated behaviors that increase cancer risk by integrating multi-faceted, culturally sensitive interventions into social environments such as public housing structures, churches, and community organizations to alter health behavior, affected by individual and racial/ethnic/cultural factors.

For this intervention, focus on cancers with evidence-based screening recommendations known to reduce mortality, such as breast, cervical, colorectal, and prostate cancer. The social network of an individual often impacts his/her attitudes about particular health behaviors. Therefore, the aim would be to capitalize on these social networks by combining interventions that can help reduce health disparities with strategies that immediately facilitate the commitment of individuals to obtain screening, as well as with strategies that help them overcome any barriers to screening.³⁴ Research Tested Intervention Programs (RTIP) have been developed.^t

^t Examples of such Research Tested Intervention Programs (RTIP) include the following.

A cornerstone multi-dimensional, RTIP, social network intervention, called Friend to Friend (FTF),³⁶ was conducted during 1994 in Minneapolis among low-income women living in public housing. It was planned with the local ACS and consisted of recruitment activities in a public housing building, an hour-long event in each building,

- **Strategy ESS – 1.1.1.** Identify various cultural groups (e.g., blacks, Eastern Europeans, Haitians, Asians, Hispanics, etc.), and conduct outreach and education to increase their awareness of the various forms of cancer, identifying barriers facing each of the risk groups and working with key stakeholders to reach them.
- **Strategy ESS – 1.1.2.** Publicize programs of the local chapter of the ACS, such as (1) Sister to Sister, which is designed to reduce breast, cervical and colorectal cancer in black women; and (2) Brother's Talk, which is designed to raise awareness of prostate and colorectal cancer screening in black men. This should help to recruit more community members to help with implementation of these programs, e.g., healthcare providers and survivors who can assess attitudes and concerns of specific populations prior to implementing the intervention at various social environments, such as public housing buildings, churches, and community gathering places (CE-2.1.1, CE-2.1.2). These community members can serve as volunteers in disseminating breast, cervical, prostate, and colorectal cancer information to high-risk groups like minorities, the elderly, and the indigent (BR-1.3.6).
- **Strategy ESS – 1.1.3.** Expand these current programs of the local chapter of the ACS or use them as models for new interventions through collaboration with New Community Corporation and other housing development organizations, churches, and other social networks in the county (AC-2.1.5).
- **Strategy ESS – 1.1.4.** Identify and refer members of at-risk populations to hospitals and mammography facilities that offer screening and treatment, especially those that receive grants to offer free or reduced-cost screening to the uninsured/underinsured (CE-1.2.2). Respondents to the CRDNJ survey at various facilities (such as mammography centers) that had received such grants expressed concern regarding how to reach their populations of focus, which suggests that collaboration such as this would benefit all parties involved.

Goal ESS – 2. Improve the knowledge of healthcare practitioners about the importance of early detection of cancer through efficacious screening of at-risk patients.

- **Objective ESS – 2.1.** Measure and then increase the number of physicians and nurse practitioners, especially at safety net clinics (e.g., FQHCs, family planning clinics, community, and teaching hospitals that provide services to individuals without ready access

and outreach to non-participants by women who attended the events. The hour-long component was the core of the program and was advertised as a “party.” Oral education presentations on breast cancer and mammography were made by doctors/nurses and followed by small group discussion. Trained volunteers from the community were present to offer to each woman in their group assistance in receiving mammograms by prompting their physicians to recommend a mammogram or sending reminders to their physicians. If a woman was uninsured or underinsured, the facilitator directed the woman to a center where she could receive a free mammogram, assistance with scheduling the appointment, and free transportation, in order to minimize any of the financial and/or social barriers.³⁶

A similar RTIP employed a community- and clinic-based, multi-faceted, culturally sensitive intervention to change beliefs, attitudes, and screening behaviors, specifically for Pap tests and mammography, of women aged 40 and older who resided in low-income housing communities in two communities in North Carolina, Winston-Salem and Greensboro, during 1993–1996.

Both randomized, controlled interventions found significant improvements in mammography and Pap test utilization rates, as well as reduced barriers to screening.^{36,37}

to medical services), who recommend mammography, Pap tests, and colorectal cancer screening to appropriate patients (BR-3.2).^u

- **Strategy ESS – 2.1.1.** Conduct focus group studies with physicians in Essex County, especially those serving the underserved population in the four inner-city municipalities, to understand barriers to cancer screening recommendations. Also conduct appropriate *academic detailing* (utilizing educational detailers who visit physicians in their offices or clinics and provide them with education) to encourage an increase in physician recommendations of efficacious cancer screening to patients. Studies of academic detailing on cancer prevention counseling and screening procedures⁴⁰ in a sample of physicians practicing in an urban minority community support the assertion that simply increasing the number of patient contacts with physicians may effect change in patients' cancer prevention and screening behaviors (BR-4.1.2, CO-1.3.1).
- **Strategy ESS – 2.1.2.** Integrate a cancer prevention and detection curriculum in all four years of medical school, to strengthen medical students' cancer prevention, detection, and counseling activities as physicians.⁴¹
- **Strategy ESS – 2.1.3.** Inform physicians about “missed opportunities”; in other words, when patients arrive for any other treatment, providers should use that opportunity to pre-complete a short questionnaire focused on cancer screening history (i.e. “how long has it been since your last mammogram?,” etc.) and to remind their patients about screening and short- and long-term follow-ups, rather than missing the opportunity to do so (AC-4.2.4).
- **Strategy ESS – 2.1.4.** Recommend that healthcare professional societies such as the County Medical Society and the North Jersey Medical Society educate their members based on identified gaps regarding screening for breast, cervical, and colorectal cancers (CO-1.3.3).
- **Strategy ESS – 2.1.5.** Disseminate clinical guidelines for screening and follow-up to appropriate healthcare providers, especially in clinic-based settings (CE-4.1.1).

^u According to a review of data from seven studies sponsored by the National Cancer Institute (NCI), many physicians may overlook opportunities to recommend mammography for older women (aged 50–74 years) when performing a clinical breast examination and to educate their patients about the benefit of screening mammography. The two most common reasons women gave for never having had a mammogram were that they did not know they needed it and that their physician had not recommended it.³⁸

Similarly, for colon and rectal cancer, a mail/telephone survey conducted among 150 African-American patients (aged 50–79 years) in an inner-city hospital found that a previous physician recommendation was strongly associated with levels of FOBT ($p < 0.001$), flexible sigmoidoscopy, and colonoscopy use.³⁹ Approximately one-half (55%) of all survey respondents ($n = 66$) reported having received an FOBT in the last year, flexible sigmoidoscopy in the last 5 years, or colonoscopy in the last 10 years. Of these 66 survey respondents, 39% reported no physician recommendation for FOBT, 60% reported never having received a recommendation for flexible sigmoidoscopy, and 57% reported never having received recommendation for colonoscopy.³⁹ Lack of receipt of colorectal screening has previously been found to be associated with lower income, lower educational level, and racial/ethnic minority status, so merely increasing the current emphasis to screen may not work. Factors that influence physician decision-making to order and recommend screening tests to patients, and factors that influence patients' adherence to their physicians' screening recommendations, need to be better understood to devise ways to improve screening.³⁹

Goal ESS – 3. Support NJ-CCCP’s promotion of cancer prevention.

- **Objective ESS – 3.1.** Implement interventions focused on the prevention of behaviors that increase the risk of prostate, lung, oral and bladder cancers, and melanoma. Such interventions are also relevant for reducing the risk of breast, cervical, and colorectal cancers. For example, lung cancer is the leading cause of cancer death among men and women in Essex County, with smoking being the leading risk factor for lung cancer. Hospitals have been shown to be useful venues for promoting behavior change in patients admitted for smoking-related conditions^v because the patient is “captive” and perhaps “susceptible”, due to anxiety related to the hospital admission. In Essex County, hospitals often serve as the entry-point for healthcare for many patients. Currently in Essex County, smoking cessation programs are offered in two hospitals (Newark Beth Israel Medical Center and Saint Barnabas Medical Center).
 - **Strategy ESS – 3.1.1.** Smoking cessation programs should be extended to community-based organizations, health centers, local churches, private physicians’ offices, emergency rooms, and/or homeless shelters where the population in need can access them, allowing a greater percentage of the population can take advantage of them.
 - **Strategy ESS – 3.1.2.** Also, as noted in the NJ-CCCP, hospitals should be used as access points for oral cancer examination of every at-risk patient admitted, with particular focus on tobacco users and alcohol abusers (or those admitted for alcohol-related maladies, such as pancreatitis), beginning with hospitals with dental residency programs, and eventually hospitals and clinics with no dental residency programs (OR-2.12, Appendix H).
 - **Strategy ESS – 3.1.3.** Kitchen programs should be set up at WIC sites to help staff demonstrate cooking techniques in order to change perceptions and increase knowledge of nutrition. According to discussions with WIC nutritionists in East Orange and Belleville, there is a lack of knowledge about the importance of eating healthy (fruits, vegetables), especially among inner-city populations.
 - **Strategy ESS – 3.1.4.** In addition, because a high percentage of blacks attend and revere church, this institution may be an ideal venue for implementing the RTIP “North Carolina Black Churches United for Better Health Project”⁴³ to deliver information to increase fruit and vegetable consumption. In Essex County, this should be focused on the four inner-city municipalities of Newark, Irvington, East Orange, and Orange, where a large proportion of the black population resides.
 - **Strategy ESS – 3.1.5.** For melanoma, under the guidance of the medical professionals in the Essex County Coalition, public and patient education to change behaviors that may increase melanoma risk (sun avoidance, sun protection, and skin self-examination) should be further conducted.^{44;45}
- **Objective ESS – 3.2.** Ensure adequate screening for all relevant cancers of all residents of Essex County for whom such screening is appropriate. Because for some cancers there is a lack of unanimity among the various national organizations as to which forms of screening are appropriate for whom, objectives from *Healthy New Jersey 2010* and/or the NJ-CCCP

^v One such intervention involving patients admitted for coronary heart disease was the subject of a randomized controlled trial. The researchers found that 20% more patients in the smoking cessation arm than the control arm quit and abstained for 12 months.⁴²

should be used as the appropriate guideline when available as they are specific to the state. When not available, one of the responsibilities of a county cancer coalition, under the guidance of its medically trained members, should be to refine which population screenings are appropriate in Essex County in those situations where there is controversy. The following strategies, which address specific cancers, are therefore to be understood as either definitive or as proposed starting points for such a discussion when unanimity is lacking.

- **Strategy ESS – 3.2.1.** For breast cancer, build on the high self-reported rate of mammography (78% of New Jersey women aged 50 and over, an estimated total of 94,000 in Essex County, reporting having had a mammogram in the previous two years in BRFSS surveys cited above in Section 3), in order to reach the *Healthy New Jersey 2010* goals of 75% of women aged 40 and above, 85% of women aged 50–64, and 75% of women aged 65 and above.¹⁵
- **Strategy ESS – 3.2.2.** For cervical cancer, build on the high self-reported rate of Pap tests (83% of women without a history of hysterectomy) to reach the *Healthy New Jersey 2010* target rate of 85% for all women, with special attention paid to ensure that black women have the same high rate of testing.¹⁵ Populations of focus in Essex County include those whose high mortality rates, which might be associated with late stage diagnosis and/or lack of awareness, education, and access to screening services, such as black females. In addition, consider incorporating the newer technologies, including ThinPrep and/or HPV-DNA testing in conjunction with cytology screening (the latter for women over 30 years) in the screening for early cervical cancer and precancerous conditions.
- **Strategy ESS – 3.2.3.** For colorectal cancer, increase the proportion of persons 50 years or older who report having had any bowel screening test in the past year or sigmoidoscopy ever from its present 56% (as reported in the BRFSS surveys cited above in Section 3) to the *Healthy New Jersey 2010* target of 65%.¹⁵ As stated earlier in this Report Summary, to help focus screening intervention efforts more localized BRFSS data (e.g., at the municipality level) is necessary to determine who is not being screened and where they reside, which will require appropriate increases in the number of people surveyed in each of these regions in Essex County as well as in populations of focus (as discussed above) to improve statistical accuracy (reflected by relatively narrow confidence intervals).
- **Strategy ESS – 3.2.4.** For melanoma, organizations such as the ACS and National Institutes of Health recommend that melanoma skin screening and health counseling on sun exposure be incorporated into periodic health examinations for men and women, even though there is controversy among national organizations with respect to who should be screened for melanoma and how often.⁴⁴ In Essex County, promotion of diagnosis and treatment for melanoma among clinicians and residents should at least be maintained at present levels or perhaps increased (ME-1.1).² (Data on the present magnitude of such efforts are not available for Essex County.) Clinicians should be alert for skin lesions with malignant features in the context of periodic physical examinations performed for other purposes. This has the potential to increase awareness about signs and symptoms, as well as supporting case-finding in vulnerable persons (like the elderly).^{44;45}

Members of the county coalition, under the guidance of its medical professionals, will need to decide whether or not to recommend total body skin screening, since it is suggested as a prudent precautionary measure for a subgroup of very high-risk individuals (those with history of increased exposure to sunlight, family history, predisposing phenotypic characteristics) by organizations including the American College of Preventive Medicine and the American College of Obstetricians and Gynecologists.⁴⁵

- **Strategy ESS – 3.2.5.** For oral/oropharyngeal cancer, continue the facilitation of access to oral cancer screening provided by several hospitals (Table 2.17a)¹ and health departments (Table 2.11)¹ to all Essex County residents, especially black males and females, who suffer disproportionate burdens of mortality in the county (OR-2).² Clinicians should also be alert to the possibility of oral cancer during routine check-ups of patients with a history of current use of tobacco and alcohol.^{44;46}
- **Strategy ESS – 3.2.6.** For prostate cancer, ensure that all men aged 50 and older with a life expectancy of at least 10 years are offered a PSA test and a Digital Rectal Exam annually; such screening should begin at age 45 for men of sub-Saharan African descent and at age 40 for men with a family history of prostate cancer.^{44;47} Information should always be provided to men about the benefits and limitations of testing so that an informed decision can be made (PR-1.1.1, 1.1.2, 1.1.3).^{2, 44;47} Since Essex County men had the highest mortality rate from prostate cancer among all counties in the state, continued efforts to increase public knowledge among all county residents, especially men at high risk (black men and men 40 and older) about the benefits of early detection must be at least maintained at present levels and preferably increased (PR-1.1).²
- **Objective ESS – 3.3.** Reduce the risk of cancers associated with or caused by viral infections.
 - **Strategy ESS – 3.3.1.** Continue to emphasize risk reduction, including outreach and education, to reduce the spread of HIV, HPV, and HCV.
 - **Strategy ESS – 3.3.2.** Sustain hepatitis B vaccination programs, which are the only vaccine for cancer.²

Goal ESS – 4. Provide trainer-to-trainer education programs to church leaders in the black and Hispanic communities to provide ongoing education for the four major causes of cancer death in the county: lung, colorectal, breast, and prostate cancers.

- **Objective ESS – 4.1.** Increase awareness among these at-risk populations about these cancers through targeted messages from church leaders, whom they trust.

Goal ESS – 5. Increase collaboration between patient and provider in decision-making, so that a patient can strengthen his/her negotiation skills regarding his/her knowledge of the cancer condition; understand the risks, benefits and uncertainties of various screening and treatment modalities; and make a decision consistent with his/her values and beliefs.

- **Objective ESS – 5.1.** Design, evaluate, and measure the outcomes of community-based interventions for Informed Decision Making (IDM) for cancer screening. With the increasing trend in greater patient involvement in healthcare decision making, more research into IDM interventions for cancer screening is needed.¹⁴ (IDM is defined on pp. 335–336.)²⁷ IDM is

increasingly relevant in addressing cancer-screening decisions for tests of uncertain benefit. IDM is especially relevant to prostate-specific antigen (PSA) testing for prostate cancer and can be an important aid to understanding the benefits, risks, and uncertainties of the screening method.²⁷

The issue of PSA testing in Essex County is especially important since the county's mortality rate from prostate cancer is the highest amongst the 21 counties in New Jersey.

Recommendations for Statewide Priorities

Recommendation 1 – Utilize sliding fees for those with ability to pay for services. The NJCEED program's income eligibility criterion is income under 250% of the federally defined poverty level. This program currently does not impose fees based on a patient's ability to pay for the services. Obviously, the reason for this is to maximize the number of people screened. But combined federal and state funding for this program is limited. The NJCEED program is budgeted for only 18% of the state's eligible population who are in need of breast and cervical cancer screening.¹

- Other publicly funded health programs currently operating in New Jersey, such as community health centers and family planning clinics, impose fees based on a sliding scale. Those with incomes equal to or less than 100% of the federal poverty level pay nothing for their services, whereas those with incomes at or above 250% pay full cost. Patients with incomes between 100% and 250% of the federal poverty level pay part of the cost for their services based on a sliding fee schedule. The imposition of these fees on any patient is governed by an overriding principle that the fees cannot be barriers to receiving the services. Therefore, from time to time, these clinics use discretion in individual circumstances to waive or reduce the fees.
- This approach to fee collection has worked very well in these other programs, and it generates substantial grant-related income that is used to expand services.⁴⁸ To provide additional funds to expand the Cancer Prevention Program, the state should consider employing a sliding fee scale similar those that have worked well in these other public health programs.

Recommendation 2 – Expand Medicaid to cover more low-income residents with a cancer diagnosis. New Jersey should streamline the Medicaid eligibility process for cancer patients. Eligibility should be automatic based on a patient's residency, financial status, and diagnosis, not the type of cancer, who does the screening, or where it takes place. Assuming this can be done, the Essex County Cancer Prevention Program, as well as other county programs, will have additional funds for prevention and treatment.

Recommendation 3 – Advocate for increased access to NJCEED screening programs to enable more people to take advantage of these services. Persons at special risk, such as those under 40 years at increased genetic risk for cancer, should have access as well (p. 325).^{1;49}

Recommendation 4 – Collect data on post-screening activities and outcome (e.g., status of follow-up care, treatment outcomes, compliance issues, etc.), and conduct evaluation of NJCEED programs to determine the proportion of at-risk populations served by the program,

how best to reach these populations, the extent to which the programs are meeting their mandate, and the extent to which patients are seeking treatment following a diagnosis of cancer.

Recommendation 5 – Increase reimbursement for state- and county-run nursing homes to encourage proper and early identification of patients in need of hospice services.

- Improve reimbursement rates for Medicaid overall to increase acceptance of this insurance as a viable source of payment for patients. This has the potential to increase the number of physicians accepting Medicaid patients, thereby reducing waiting time for care, quality of care, and timing of entrance into care.
- Offer hospice reimbursements for all Medicaid plans.
- Educate physicians about hospice services to ensure early referral of eligible patients. This has the potential to reduce cost of care, and thus result in savings for the government, institutions, and insurance companies (AC-4.2).

Closing Remarks

The Cancer Capacity and Needs Assessment provides a detailed baseline assessment for Essex County. The data, interpretations, and recommendations in this report were developed to provide a wide array of public health and medical personnel with standardized information and detailed analyses that can help guide and focus their efforts at the county level, including such local health initiatives as the forthcoming Community Health Improvement Plans. The reports from all of the counties will collectively inform the continuing comprehensive cancer control efforts of the Office of Cancer Control and Prevention of the New Jersey Department of Health and Senior Services; the Governor's Task Force on Cancer Prevention, Early Detection and Treatment in New Jersey; and the University of Medicine and Dentistry of New Jersey.

References

- (1) Tasslimi A, Hossain A, Rosenblum DM, Collini SL, Bullock B, Weiss SH. Draft Essex County Report, June 2004. In: *New Jersey Statewide County-based Cancer Capacity and Needs Assessment Initiative, 2003-2004*. Editors: Stanley H. Weiss (UMDNJ) and Margaret L. Knight (NJDHSS).
- (2) Task Force on Cancer Prevention, Early Detection and Treatment in New Jersey. New Jersey Comprehensive Cancer Control Plan. Report to the Governor, July 2002. i-xx, 1-287. 2002. Trenton, NJ, New Jersey Department of Health and Senior Services.
- (3) U.S. Census Bureau; Census 2000, Summary Files 1 and 3, generated using American FactFinder. www.factfinder.census.gov/. 2003.
- (4) Billings J. Findings from small area analysis of ambulatory care sensitive (ACS) conditions, Hudson-Bergen counties, 1989-1990, Local Advisory II. 1993. Hackensack, NJ, Fairleigh Dickinson University.
- (5) Billings J, Zeitel L, Lukomnik L, Carey TS, Blank AE, Newman L. Impact of socioeconomic status on hospital use in New York City. *Health Affairs* 1993; 12(1):162-173.
- (6) Vali FM. Access to Primary Care in New Jersey: Geographic Variations of Hospitalizations for Ambulatory Care Sensitive Conditions in 1995 & 1997. 8/25/2003. Princeton, NJ. Health Research and Education Trust of New Jersey.
- (7) Weir HK, Thun MJ, Hankey BF, Ries LAG, Howe HL, Wingo PA et al. Annual report to the nation on the status of cancer, 1975–2000, featuring the uses of surveillance data for cancer prevention and control. *J Natl Cancer Inst* 2003;95(17):1276-1299.
- (8) Weiss SH, Knight ML. Cancer Resource Database of New Jersey (CRDNJ). 2004. Newark, NJ & Trenton, NJ, UMDNJ & NJDHSS.
- (9) American Cancer Society. <http://www.cancer.org/>. September 2004.
- (10) Hennelly R. Urban hospitals under duress. 2/3/2004. WNYC Local Radio.
- (11) New Jersey State Cancer Registry, New Jersey Department of Health and Senior Services. Cancer incidence in New Jersey by county, 1996–2000, for the New Jersey Comprehensive Cancer Control Plan county capacity/needs assessments. Personal communications to SH Weiss, August and September 2003.

- (12) National Cancer Institute and Centers for Disease Control and Prevention. State cancer profiles mortality data. (Continually updated data may be obtained from <http://statecancerprofiles.cancer.gov/>, a site associated with <http://cancercontrolplanet.cancer.gov/>.) Underlying sources of data: Death data provided by the National Vital Statistics System public use data file. Death rates calculated by the National Cancer Institute using SEER*Stat. Death rates are age-adjusted to the 2000 U.S. standard population by 5-year age groups. Population counts for denominators are based on Census populations as modified by NCI. Surveillance, Epidemiology, and End Results (SEER) Program data are explained at <http://www.seer.cancer.gov/>.
- (13) Weiss SH, Klotz JB, Rosenblum DM. Estimating prevalence. Unpublished communication. 12/10/2004.
- (14) Cancer control planet: Links to resources for comprehensive cancer control. <http://cancercontrolplanet.cancer.gov/>, 6/25/2004. NCI, CDC, ACS.
- (15) New Jersey Department of Health and Senior Services. Healthy New Jersey 2010: A health agenda for the first decade of the new millennium. 2001. Trenton, NJ, New Jersey Department of Health and Senior Services.
- (16) Klotz JB, Weiss SH, Rosenblum DM, Sass MM. *Healthy New Jersey 2010* Objectives recalculated using the 2000 standard population. Personal communication to New Jersey County Evaluators. 1/30/2004.
- (17) American Cancer Society. Cancer Facts and Figures. 2003. Atlanta, Georgia, American Cancer Society, Inc.
- (18) Joslyn SA, West MM. Racial differences in breast carcinoma survival. *Cancer* 2000; 88(1):114-123.
- (19) Jones BA, Kasl SV, Howe CL, Lachman M, Dubrow R, McCrea Curnen M et al. African-American/white differences in breast carcinoma: p53 alterations and other tumor characteristics. *Cancer* 2004; 101(5).
- (20) Division of Adult and Community Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System Online Prevalence Data, 1995–2003. <http://apps.nccd.cdc.gov/brfss/index.asp>.
- (21) O'Dowd K. County-level New Jersey BRFSS cancer screening data. Personal communication to SH Weiss. 3/2/2004.
- (22) Jones CJ, Brinton LA, Hamman RF, et al. Risk factors for in situ cervical cancer: results from a case-control study. *Cancer Research* 1990; 50(12):3657-3662.

- (23) ACOG. Revised cervical cancer screening guidelines require reeducation of women and physicians: All women should have an annual pelvic exam but not all women need annual pap tests. http://www.acog.org/from_home/publications/press_releases/nr05-04-04-1.cfm?printerFriendly=yes . 5/4/2004.
- (24) National Cancer Institute. 2001 cluster profile. Unpublished data. Consumer Health Profile maps of each New Jersey county were provided by the NCI's Atlantic Region Cancer Information Service to NJDHSS/UMDNJ and to each County Evaluator. June 2003. (More information can be obtained from: 1-800-4-CANCER).
- (25) Jemal A, Clegg L, Ward E, Ries LAG, Wu X, Howe HL et al. Annual report to the nation on cancer, 1975-2001, with special feature regarding survival rates. Cancer 2004; 101(1):3-27.
- (26) Welch HG. Understand the statistics of cancer (and why five-year survival is the world's most misleading number). Should I be tested for cancer? Maybe not and here's why. Los Angeles, CA: University of California, 2004: 129-151.
- (27) Briss P, Rimer B, Reilley B, Coates RC, Lee NC, Mullen P et al. Promoting informed decisions about cancer screening in communities and healthcare systems. American Journal of Preventive Medicine 2004; 26(1):67-80.
- (28) National Cancer Institute. What you need to know about bladder cancer, 2002. <http://www.cancer.gov/cancertopics/wyntk/bladder/page5> , 6/1/2004.
- (29) New Jersey Department of Health and Senior Services. Division of HIV/AIDS Services. <http://www.state.nj.us/health/aids/qtr0603.pdf> , 4/29/04.
- (30) Kaplan JE, Hanson D, Dworkin MS, Frederick T, Bertolli J, Lindegren ML et al. Epidemiology of human immunodeficiency virus - associated opportunistic infections in the United States in the era of highly active antiretroviral therapy. Clin Infect Dis 2000; S5:S14.
- (31) Louie JK, Hsu LC, Osmond DH, Katz MH, Schwarcz SK. Trends in causes of death among persons with acquired immunodeficiency syndrome in the era of highly active antiretroviral therapy, San Francisco, 1994–1998. Journal of Infectious Diseases 2002; 186:1023-1027.
- (32) Mocroft A, Brettle R, Kirk O, Blaxhult A, Parkin JM, Antunes F et al. Changes in the cause of death among HIV positive subjects across Europe: results from the EuroSIDA study. AIDS 2002; 16:1663-1671.
- (33) Weiss SH, Skurnick J, Zhao C, Henrard D. Mortality due to hepatic failure among a cohort of injection drug users: a preliminary report from the United States. Anales De Medicina Interna 1995; Octubre(suppl.):57-58.

- (34) Sorenson G, Emmons K, Hunt MK, Barbeau E, Goldman R, Peterson K et al. Model for incorporating social context in health behavior interventions: applications for cancer prevention for working-class, multiethnic populations. *Preventive Medicine* 2003; 37:188-197.
- (35) Roche LM, Skinner R, Weinstein RB. Use of a geographic information system to identify and characterize areas with high proportions of distant stage breast cancer. *J Public Health Management Practice* 2002; 8(2):26-32.
- (36) Slater JS, Ha CN, Malone ME, McGovern P, Madigan SD, Finnegan JR et al. Randomized community trial to increase mammography utilization among low-income women living in public housing. *Preventive Medicine* 1998; 27(862):870.
- (37) Paskett ED, Tatum CM, D'Agostino R, Rushing J, Velez R, Michielutte R et al. Community-based interventions to improve breast and cervical cancer screening: Results of the Forsyth County cancer screening (FoCas) project. *Cancer Epidemiology, Biomarkers, and Prevention* 1999; 8:453-459.
- (38) NCI Breast Cancer Screening Consortium. Screening mammography: a missed clinical opportunity? *JAMA* 1990; 264(1):54-58.
- (39) Taylor V, Lessler D, Mertens K, Tu SP, Hart A, Chan N et al. Colorectal cancer screening rates among African Americans: the importance of physician recommendation. *Journal of the National Medical Association* 2003; 95(9):806-812.
- (40) Sheinfeld S, Gemson D, Ashford A, Bloch S, Lantigua R, Ahsan H et al. Cancer education among primary care physicians in an underserved community. *American Journal of Preventive Medicine* 2000; 19(1):53-58.
- (41) Geller AC, Prout MN, Miller DR, Siegel B, Sun T, Ockene J et al. Evaluation of a cancer prevention and detection curriculum for medical students. *Preventive Medicine* 2002; 35:78-86.
- (42) Quist-Paulsen P, Gallefoss F. Randomized controlled trial of smoking cessation intervention after admission for coronary heart disease. *Br Med J* 2003; 327(7426):1254-1257.
- (43) Guide to community preventive services: Systematic reviews and evidence based recommendations. <http://www.thecommunityguide.org/>, 6/25/2004.
- (44) Smith RA, Cokkinides V, Eyre HJ. American cancer society guidelines for the early detection of cancer, 2004. *CA: A Cancer Journal for Clinicians* 2004; 54(1):41-52.
- (45) U.S. Preventive Services Task Force. Screening for skin cancer: Recommendations and rationale, 2001. www.ahrq.gov/clinic/ajpmsuppl/skcarr.htm, 10/7/2004. Agency for Healthcare Research, Rockville, MD.

- (46) U.S. Preventive Services Task Force. Screening for oral cancer: Recommendations and rationale. <http://www.ahrq.gov/clinic/3rduspstf/oralcan/oralcanrs.htm> , 10/7/2004. Agency for Healthcare Research, Rockville,MD.
- (47) U.S. Preventive Services Task Force. Screening for prostate cancer: Recommendations and rationale, 2002. <http://www.ahrq.gov/clinic/uspstf/uspSprca.htm> , 10/7/2004. Agency for Healthcare Research, Rockville,MD.
- (48) Bullock W. Utilization of sliding fees. Unpublished data. Personal communication to A Tasslimi, 6/28/2004.
- (49) McWilliams JM, Zaslavsky AM, Meara E, Ayanian JZ. Impact of Medicare coverage on basic clinical services for previously uninsured adults. JAMA 2003; 290(6):816-818.